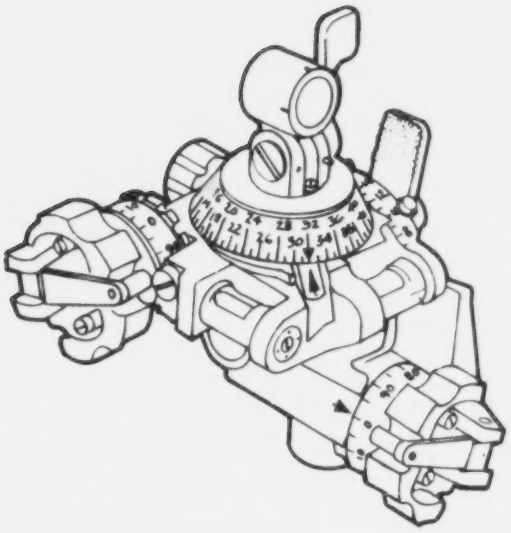
9-1240-386-34+P

TECHNICAL MANUAL

DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST
(INCLUDES DEPOT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS)
MOUNT, TELESCOPE
1240-01-050-5588
(PART OF M64 SIGHT UNIT)



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This copy is a reprint which includes current pages from Change 1.

HEADQUARTERS, DEPARTMENT OF THE ARMY

MARCH 1981

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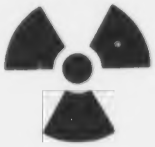
READEX FICHE best copy available

WARNING

RADIATION HAZARD



TRITIUM (H_3)

A. *RULES and REGULATIONS:* Copies of the following rules and regulations are maintained at HQ, ARRCOM, Rock Island, IL 61299. Copies may be requested or information obtained by contacting the ARRCOM Radiological Protection Officer (RPO), AUTOVON 793-6982, Commercial (309)794-5843.

(1) 10CFR Part 19 - Notices, Instructions and Reports to Workers; Inspections.

(2) 10CFR Part 20 - Standards for Protection Against Radiation.

(3) NRC license, license conditions, and license application.

B. *SAFETY PRECAUTIONS:* The radioactive material used in this instrument is tritium gas (H_3) sealed in pyrex tubes. It poses no significant hazard to the repairman when intact. These sources illuminate the instrumentation for night operations. Tampering with, or removal of the sources in the field is prohibited by Federal law. In the event there is no illumination, notify the local Radiological Protection Officer. Do not attempt to repair or replace the instrument in the field. If skin contact is made with any area contaminated with tritium, wash immediately with nonabrasive soap and water.

C. *IDENTIFICATION:* Radioactive self-luminous sources are identified by means of radioactive warning labels (as above). These labels should not be defaced or removed, and should be replaced immediately when necessary. Refer to the local RPO or the ARRCOM RPO for instructions on handling, storage, or disposal.

D. *STORAGE AND SHIPPING:* All radioactively illuminated instruments or modules which are defective will be evacuated to a depot maintenance activity. These items must be placed in a plastic bag and packaged in the shipping container from which the replacement was taken before evacuation to a higher echelon is made. Spare equipment must be stored in the shipping container as received until installed on the weapon. Storage of these items is recommended to be in an outdoor shed type storage or unoccupied building

FIRST AID

For further information on first aid, see FM 21-11.

TM 9-1240-386-34&P
C1

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC. *16 December 1983*

DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST
(INCLUDES DEPOT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS)

MOUNT, TELESCOPE
1240-01-050-5588
(PART OF M64 SIGHT UNIT)

TM 9-1240-386-34&P, 27 March 1981, is changed as follows:

1. Remove old pages and insert new pages as indicated below.
2. New or changed material is indicated by a vertical bar in the margin of the pages.
3. Added or revised illustrations are indicated by a vertical bar adjacent to the illustration.

Remove Pages	*Insert Pages*
2-31 thru 2-34	2-31 thru 2-34
D-1 and D-2	D-1 and D-2
None	D-3 (D-4 blank)

4. File this change sheet in front of publication for reference purposes.

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Major General, United States Army
The Adjutant General

Distribution: To be distributed in accordance with DA Form 12-41, Direct and General Maintenance Support requirements for Mount, Telescope.

TECHNICAL MANUAL
No. 9-1240-386-34&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 27 March 1981

Direct Support and General Support
Maintenance Manual
Including Repair Parts and Special Tools List
(Includes Depot Maintenance Repair Parts and Special Tools)

Mount, Telescope
1240-01-050-5588
(Part of M64 Sight Unit)

Current as of 1 July 1980

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished to you.

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CHAPTER 1
INTRODUCTION

CHAPTER OVERVIEW

This chapter contains general information and equipment description and data for the Telescope Mount.

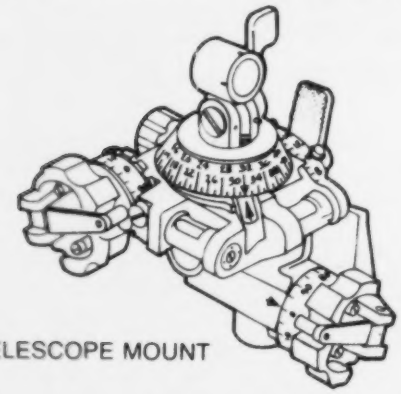
Section I. GENERAL INFORMATION

1-1. SCOPE.

a. *Type of Manual.* Direct and general support maintenance. However, this manual does not contain direct support maintenance procedures. Direct support does not have the necessary fixtures.

b. *Model Number and Equipment Name.* Telescope Mount.

c. *Purpose of Equipment.* The Telescope Mount with Elbow Telescope make up the M64 Sight Unit which is used for indirect sighting of the 60-mm Mortar M224.



TELESCOPE MOUNT

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System.

1-3. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE. Procedures and materials used for the destruction of the Sight Unit M64 to prevent enemy use will be found in FM 5-25.

1-4. PREPARATION FOR STORAGE OR SHIPMENT. Refer to TM 740-90-1 for administrative storage instructions.

1-5. NOMENCLATURE CROSS-REFERENCE LIST. This listing includes nomenclature cross-references used in this manual.

Common Name	*Official Nomenclature*
Knob Assembly (Azimuth)	Dial Control 11741790
Scale (Azimuth)	Dial Control 11733740
Scale (Index)	Dial Control 11741763
Scale Assembly Micrometer	Dial Control 11733748
Scale (Elevation) Micrometer	Dial Control 11733742
Knob Assembly (Elevation)	Knob Assembly
Locking Knob	Knob
Knob (Azimuth)	Knob
Knob (Elevation)	Knob
Cross-Leveling Fixture	Elevation and Cross-Leveling Fixture
Elevation Scale	Indicating Scale
Knob Handle	Hand Crank
Elevation Adapter	Adapter 11750708
Inspection Adapter	Adapten 11750709
Index Azimuth	Index Nuclear 11478093
Index (Elevation) Micrometer	Index Nuclear 11478093

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR). If your telescope mount needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Tell why a procedure is hard to perform. Put it on SF 368 (Quality Deficiency Report). Mail it to us at Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAO, Rock Island, IL 61299. We'll send you a reply.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-7. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

- The Sight Unit M64 (consisting of the telescope mount and elbow telescope) is used to lay the mortar M224 for deflection and elevation.
- Lighting for night operations using sight unit is accomplished by using radioactive tritium gas contained in phosphor-coated glass vials.
- The sight unit is lightweight and portable.

1-8. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

(A) ELBOW TELESCOPE. A 1.5 power hermetically sealed elbow telescope with a tritium illuminated crosshair reticle.

NOTE

The elbow telescope is a direct exchange item and is replaced at the organizational level. It is not covered in this manual.

(B) TELESCOPE MOUNT. The telescope mount provided with tritium backlighted level vials, indexes, and translucent plastic scales is used to orient the elbow telescope in azimuth and elevation.

1-9. EQUIPMENT DATA.

Weight	2 1/2 lbs
Field of View	17 degrees
Magnification	1.5 X nominal 1.35 effective
Dimensions	4 3/8 X 4 3/8 X 7 3/8
Illumination	Self-illuminated 4-6 years service life (5.2 curies of tritium)

M64 SIGHT UNIT

CHAPTER 2
MAINTENANCE INSTRUCTIONS

CHAPTER OVERVIEW

This chapter contains information on:

a. Repair Parts, Special Tools, TMDE, and Support Equipment
b. Troubleshooting
c. Maintenance Procedures
d. Test of Repaired Components

Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

2-1. **COMMON TOOLS AND EQUIPMENT.** For authorized common tools and equipment refer to the Modified Table of Organization and Equipment (MTOE) applicable to you.

2-2. **SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT.** Special tools and equipment are included in appendix B and D.

2-3. **REPAIR PARTS.** Repair parts authorized at the direct and general support maintenance levels are listed and illustrated in appendix B.

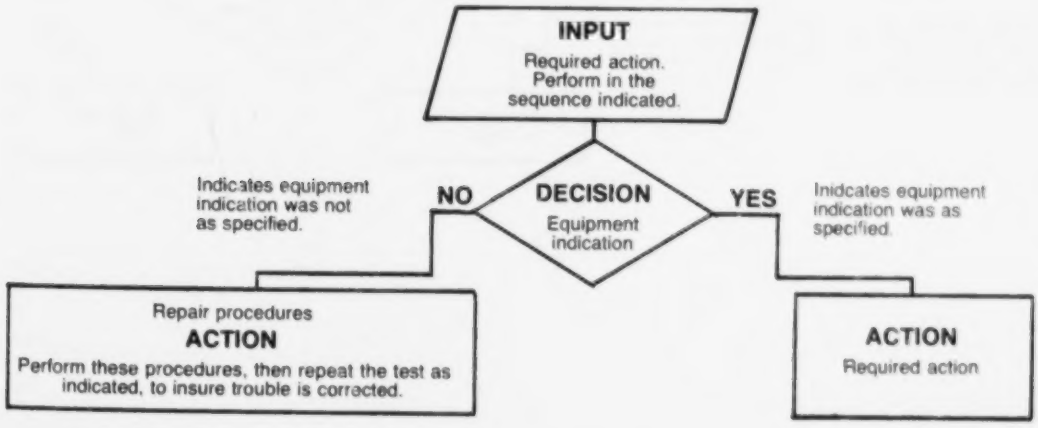
Section II. TROUBLESHOOTING

CAUTION

Before starting any maintenance procedures, check the mount for illumination in a dark area. If not illuminated, follow evacuation procedures on the warning page on the inside front cover.

2-4. **GENERAL.** This section contains troubleshooting information for locating and correcting most operating troubles which may develop in the telescope mount.

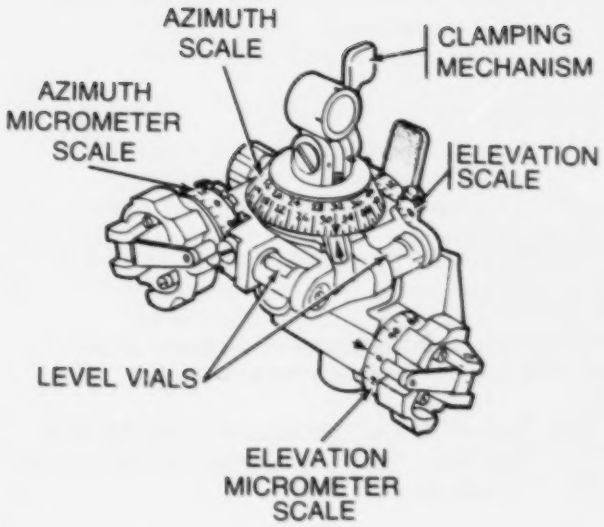
2-5. **SAMPLE TROUBLESHOOTING PROCEDURES.** The following describes the use of the troubleshooting charts.

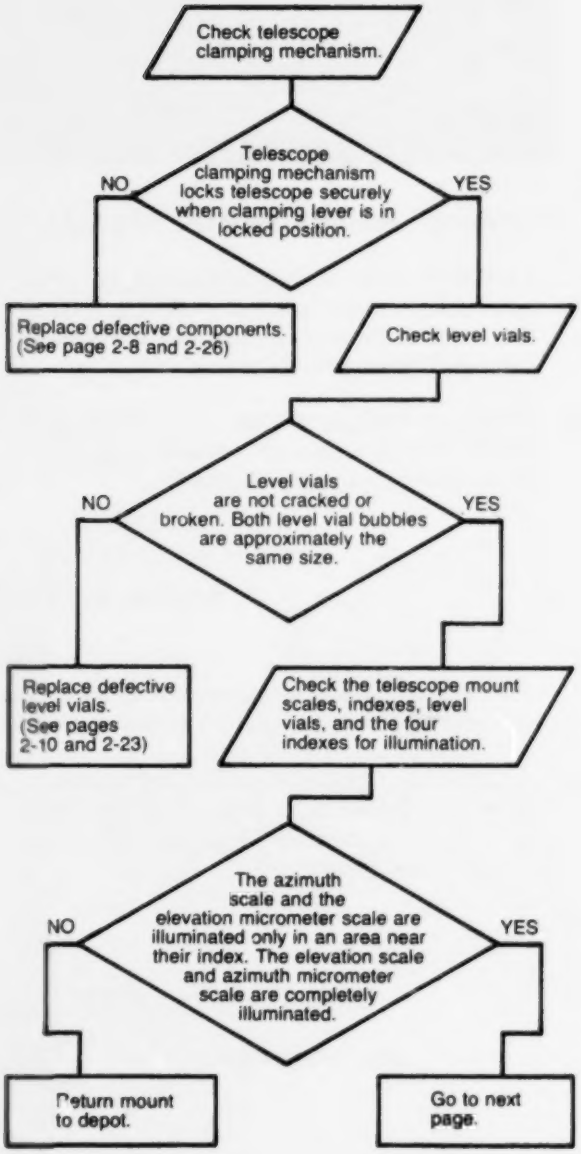


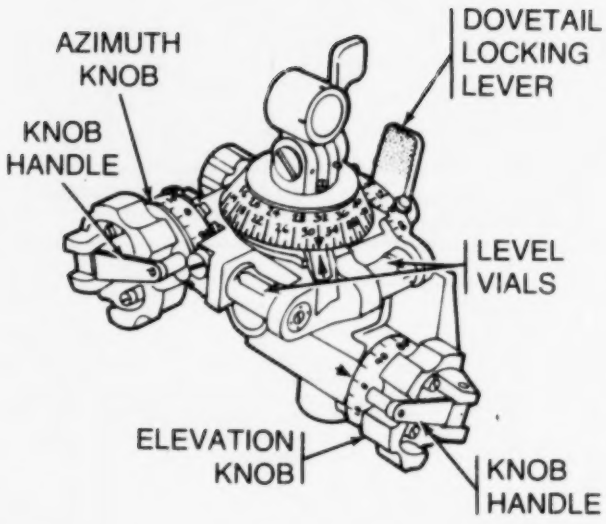
2-6. TROUBLESHOOTING PROCEDURES.

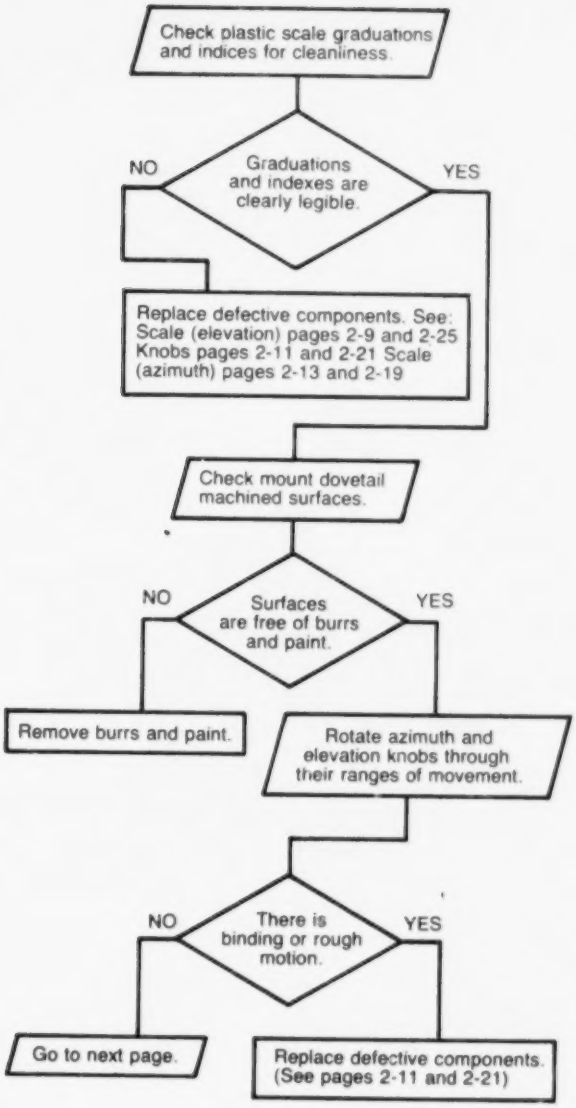
Perform the following procedures:

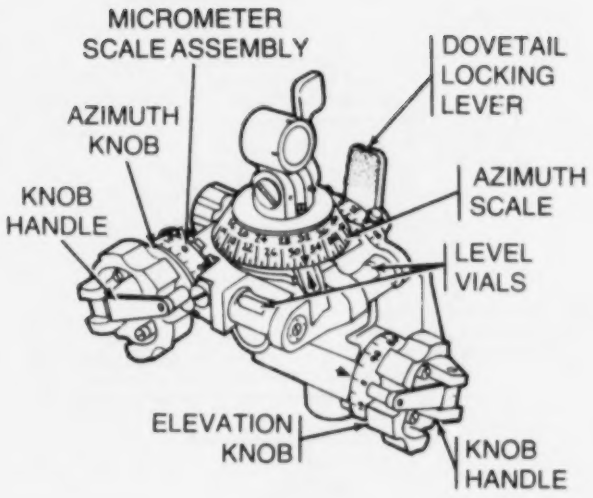
Telescope Mount.

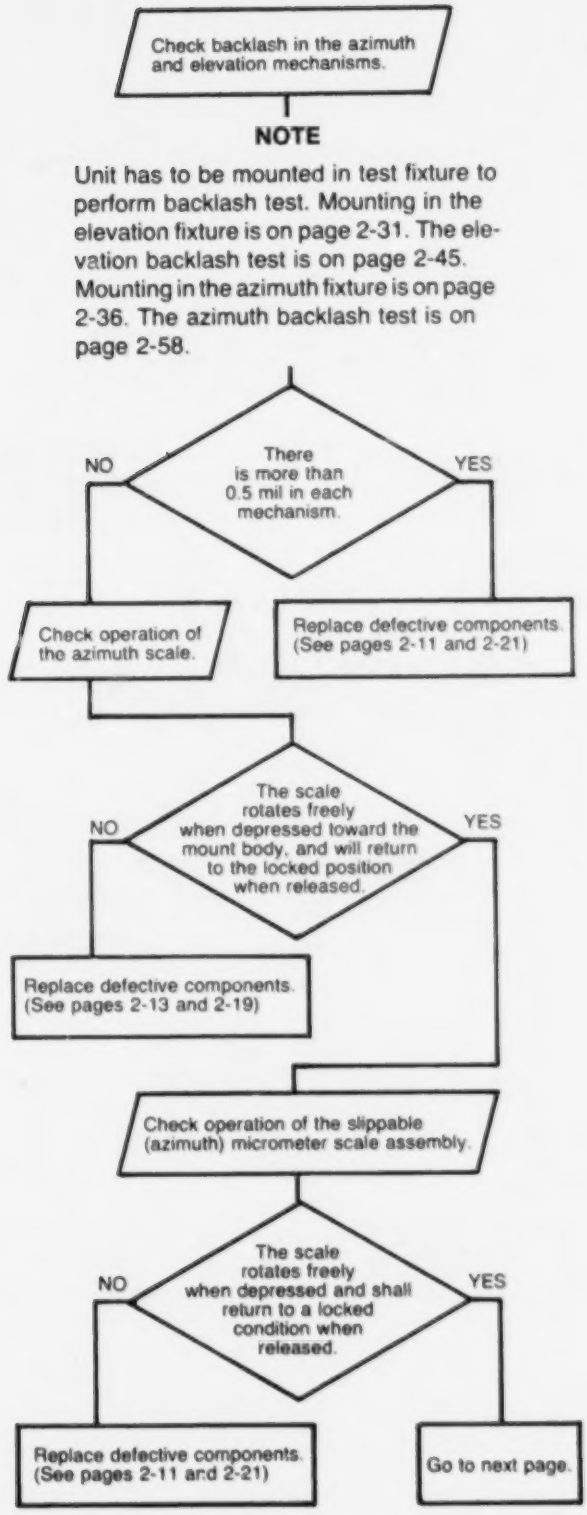


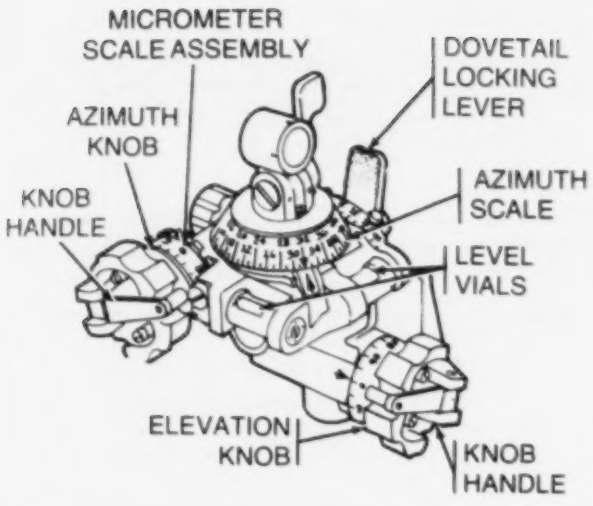

Check telescope clamping mechanism.
Telescope clamping mechanism locks telescope securely when clamping lever is in locked position.
NO
YES
Replace defective components. (See page 2-8 and 2-26)
Check level vials.
Level vials are not cracked or broken. Both level vial bubbles are approximately the same size.
NO
YES
Replace defective level vials. (See pages 2-10 and 2-23)
Check the telescope mount scales, indexes, level vials, and the four indexes for illumination.
The azimuth scale and the elevation micrometer scale are illuminated only in an area near their index. The elevation scale and azimuth micrometer scale are completely illuminated.
NO
YES
Return mount to depot.
Go to next page.

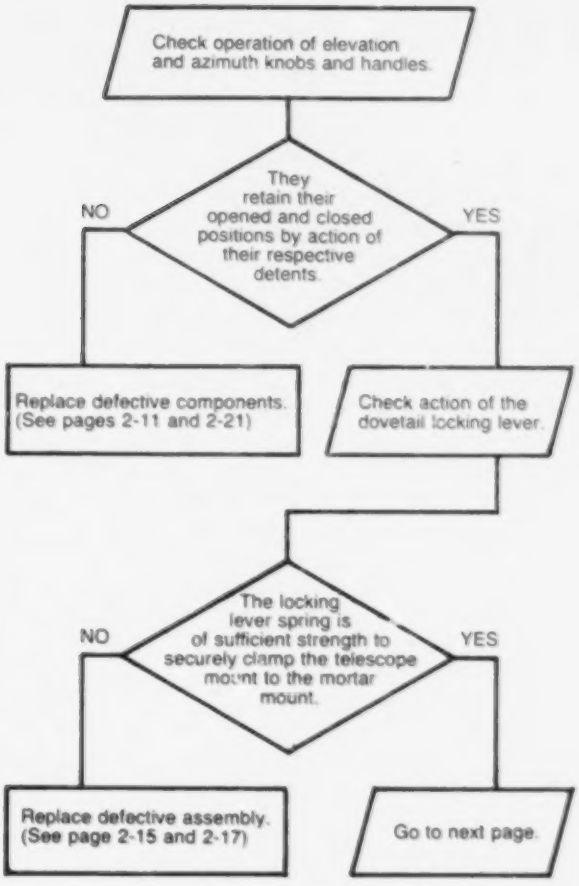

AZIMUTH KNOB
KNOB HANDLE
DOVETAIL LOCKING LEVER
LEVEL VIALS
ELEVATION KNOB
KNOB HANDLE

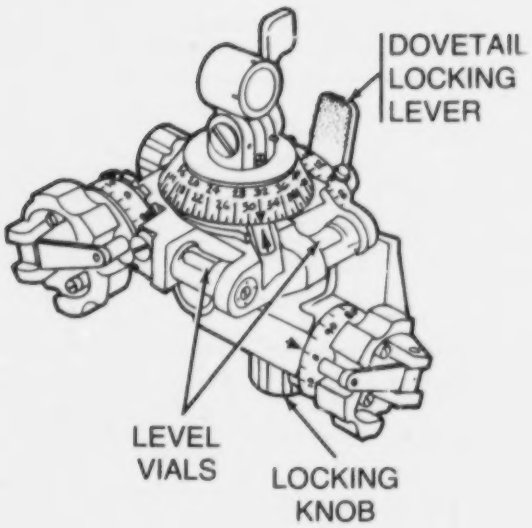

Check plastic scale graduations and indices for cleanliness.
Graduations and indexes are clearly legible.
NO
YES
Replace defective components. See: Scale (elevation) pages 2-9 and 2-25 Knobs pages 2-11 and 2-21 Scale (azimuth) pages 2-13 and 2-19
Check mount dovetail machined surfaces.
Surfaces are free of burrs and paint.
NO
YES
Remove burrs and paint.
Rotate azimuth and elevation knobs through their ranges of movement.
There is binding or rough motion.
NO
YES
Go to next page.
Replace defective components. (See pages 2-11 and 2-21)

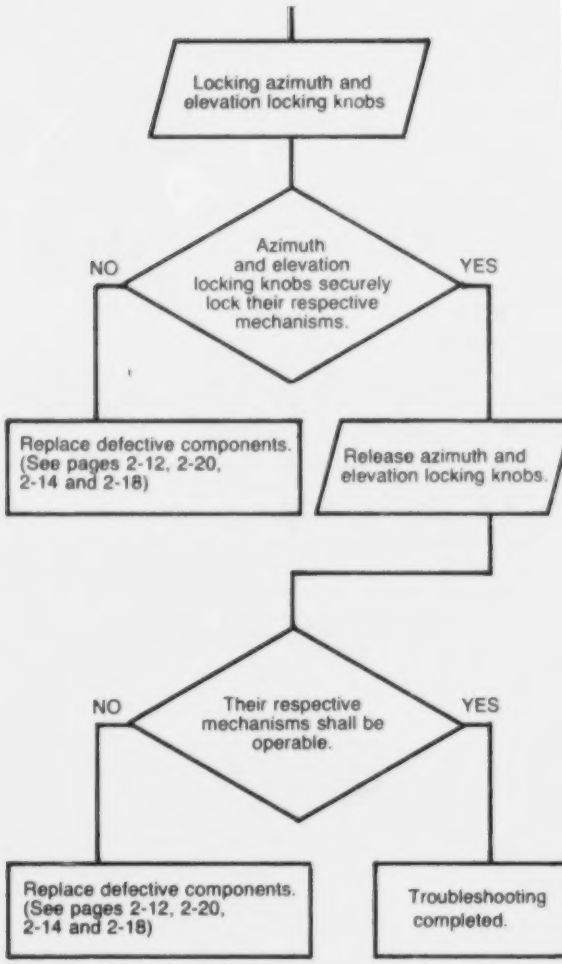

MICROMETER SCALE ASSEMBLY
DOVETAIL LOCKING LEVER
AZIMUTH KNOB
AZIMUTH SCALE
KNOB HANDLE
LEVEL VIALS
ELEVATION KNOB
KNOB HANDLE


Check backlash in the azimuth and elevation mechanisms.
NOTE
Unit has to be mounted in test fixture to perform backlash test. Mounting in the elevation fixture is on page 2-31. The elevation backlash test is on page 2-45. Mounting in the azimuth fixture is on page 2-36. The azimuth backlash test is on page 2-58.
There is more than 0.5 mil in each mechanism.
NO
YES
Check operation of the azimuth scale.
Replace defective components. (See pages 2-11 and 2-21)
The scale rotates freely when depressed toward the mount body, and will return to the locked position when released.
NO
YES
Replace defective components. (See pages 2-13 and 2-19)
Check operation of the slippable (azimuth) micrometer scale assembly.
The scale rotates freely when depressed and shall return to a locked condition when released.
NO
YES
Replace defective components. (See pages 2-11 and 2-21)
Go to next page.


MICROMETER SCALE ASSEMBLY
DOVETAIL LOCKING LEVER
AZIMUTH KNOB
AZIMUTH SCALE
KNOB HANDLE
LEVEL VIALS
ELEVATION KNOB
KNOB HANDLE


Check operation of elevation and azimuth knobs and handles.
They retain their opened and closed positions by action of their respective detents.
NO
YES
Replace defective components. (See pages 2-11 and 2-21)
Check action of the dovetail locking lever.
The locking lever spring is of sufficient strength to securely clamp the telescope mount to the mortar mount.
NO
YES
Replace defective assembly. (See page 2-15 and 2-17)
Go to next page.


DOVETAIL
LOCKING
LEVER
LEVEL
VIALS
LOCKING
KNOB


Locking azimuth and elevation locking knobs
Azimuth and elevation locking knobs securely lock their respective mechanisms.
NO
YES
Replace defective components. (See pages 2-12, 2-20, 2-14 and 2-18)
Release azimuth and elevation locking knobs.
Their respective mechanisms shall be operable.
NO
YES
Replace defective components. (See pages 2-12, 2-20, 2-14 and 2-18)
Troubleshooting completed.

Section III. MAINTENANCE PROCEDURES

2-7. **GENERAL.** These instructions are for use by direct and general support maintenance personnel. They apply to the telescope mount.

a. Refer to TM 9-254 for general maintenance procedures for fire control materiel.

b. Refer to TM 43-0139 for painting instructions.

c. Refer to appendix C for expendables.

d. Anytime a part containing tritium (radioactive material) is removed, be extra careful in handling. Never leave the part lying around where it could accidently be damaged.

e. In event of a cracked glass, loss of illumination, or suspected leakage of a radioactive component, notify the RPO and seal the component or assembly in a plastic bag.

f. Lubricate all mating surface areas with grease (item 6, appendix C).

g. All felt washers and strips should be replaced 100% when any maintenance is performed which requires the removal of the parts.

2-8. **INITIAL SETUP.** In order to reduce the space required for the initial setup portion of the maintenance procedures the following is understood:

a. Resources required are not listed unless they apply to the procedure.

b. *Personnel Required* is listed only if the task requires more than one. If *Personnel Required* is not listed it means one person can do the job.

c. This manual covers only one model. *Applicable Configuration* is not listed.

d. The normal *Equipment Condition* is that the item is removed from end item or next higher assembly and is in the assembled condition. *Equipment Condition* is not listed unless some other condition is required.

e. The approximate time required is listed on the applicable Maintenance Allocation Chart (MAC). *Approximate Time Required* is not listed unless it varies appreciably from that listed in the MAC.

f. Any part listed under *Materials/Parts* is a mandatory replacement item if maintenance requires removal.

2-9. TELESCOPE MOUNT MAINTENANCE INSTRUCTIONS.

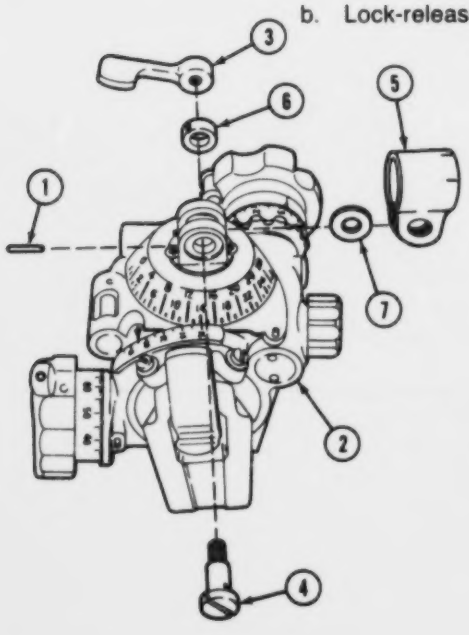
This task covers:
a. Disassembly
b. Cleaning and lubrication
c. Repair
d. Reassembly

INITIAL SETUP

Tools
Screwdriver set
Punch set
Brass hammer
Steel block
Spanner wrench
Allen wrenches

Materials/Parts
Cleaning compound (item 3, app C)
Grease (item 6, app C)
Sealing compound (item 8, app C)
Sealing compound (item 9, app C)
Preformed felt 1174173-1, 11741731-2, and 11741758-1
Plunger 11741729
Spring 11741728

LOCATION	ITEM	ACTION
DISASSEMBLY		
1 Telescope Mount	a. Spring pin (1)	Drive spring pin (1) from telescope mount (2).
	b. Lock-release lever (3)	Loosen lock-release lever (3) by turning counterclockwise.



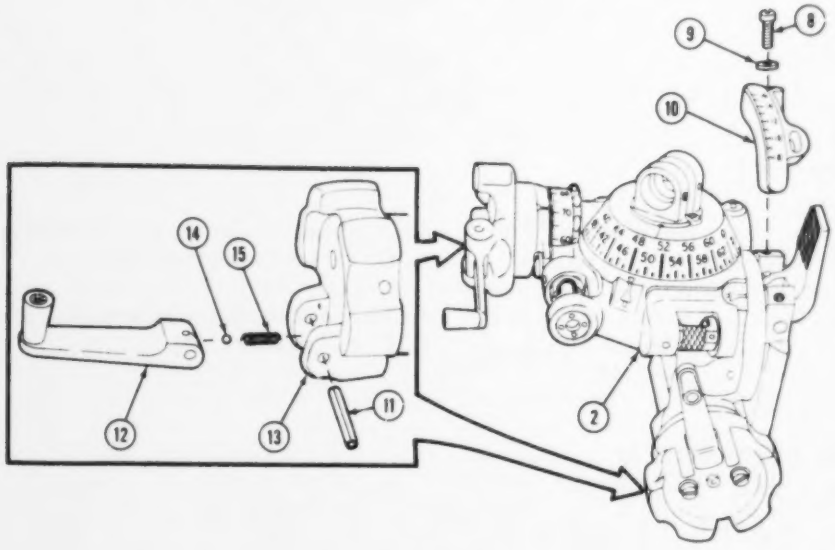
LOCATION	ITEM	ACTION
	c. Bolt (4)	Unscrew bolt (4) from lock-release lever (3) and remove lock-release lever (3) and bolt (4) from telescope mount (2).
	d. Loop clamp (5), bushing (6), and washer (7)	Remove loop clamp (5), bushing (6), and washer (7) from telescope mount (2).

WARNING

TRITIUM (H_3)

The scale (10) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

2	Screw (8), washer (9), and scale (elevation) (10)	Unscrew and remove two screws (8), two washers (9), and scale (10) from telescope mount (2).



NOTE

Hand crank removal procedure applies to both azimuth and elevation knobs. Hand crank is only removed if defective. For that reason, it is shown still installed in the illustrations which follow this step.

Spring (15) is under pressure when hand crank (12) is installed. When removing spring pin (11), hand crank (12) should be depressed to prevent losing ball (14) and spring (15).

3	a. Spring pin (11), hand crank (12), and knob (13)	Drive spring pin (11) from hand crank (12) and knob (13).
	b. Ball (14) and spring (15)	Remove hand crank (12), ball (14), and spring (15) from knob (13).

2-9. TELESCOPE MOUNT MAINTENANCE INSTRUCTIONS (CONT).

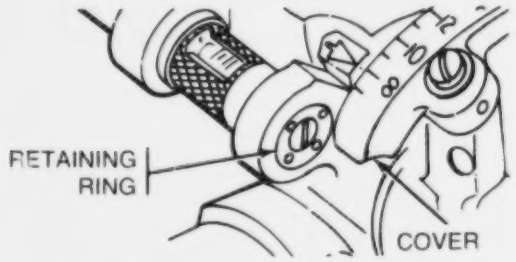
LOCATION	ITEM	ACTION

DISASSEMBLY (CONT)

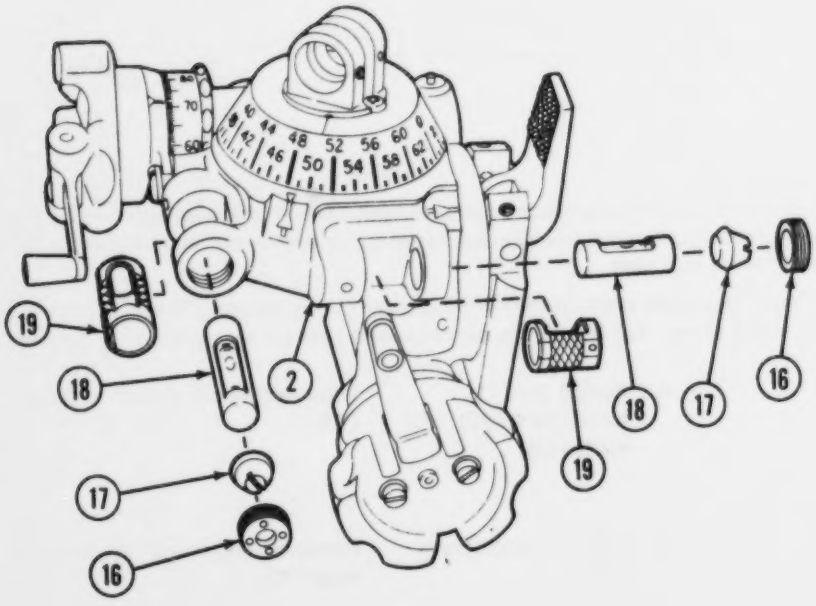
WARNING

The level assembly (18) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

If removing level assembly with spanner wrench when scale (elevation) is still attached, be extra careful not to crack plastic cover on scale. If cover is cracked or broken, radioactive material will leak out.



4	a.	Retaining ring (16)	Using a spanner wrench, remove either or both retaining rings (16) from telescope mount (2).
	b.	Eccentric (17), level assembly (18), and cover (19)	Remove one or both eccentrics (17), level assemblies (18), and/or covers (19).



LOCATION	ITEM	ACTION

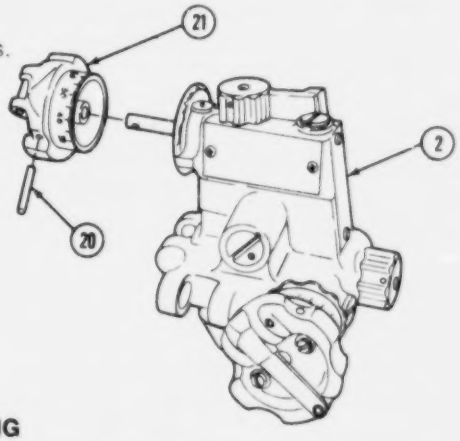
WARNING

Components containing radioactive material (Tritium H_3) are positioned under knob (21). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

5 Spring pin (20) and knob assembly (elevation) (21) — Drive spring pin (20) from knob assembly (21). Remove knob assembly (21) from telescope mount (2).

NOTE

Refer to page 2-30 for maintenance instructions.



WARNING

The knob assembly (azimuth) (23) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

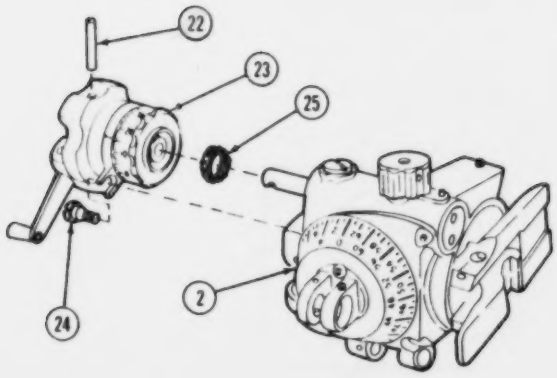
NOTE

Refer to page 2-27 for maintenance instructions.

6 a. Spring pin (22) and knob assembly (azimuth) (23) — Drive spring pin (22) from knob assembly (23).

b. Screw (24) and preformed felt (25) — Remove screw (24) from knob assembly (23) and telescope mount (2).

Remove knob assembly (23) and preformed felt (25) from telescope mount (2). Discard preformed felt (25).



2-9. TELESCOPE MOUNT MAINTENANCE INSTRUCTIONS (CONT).

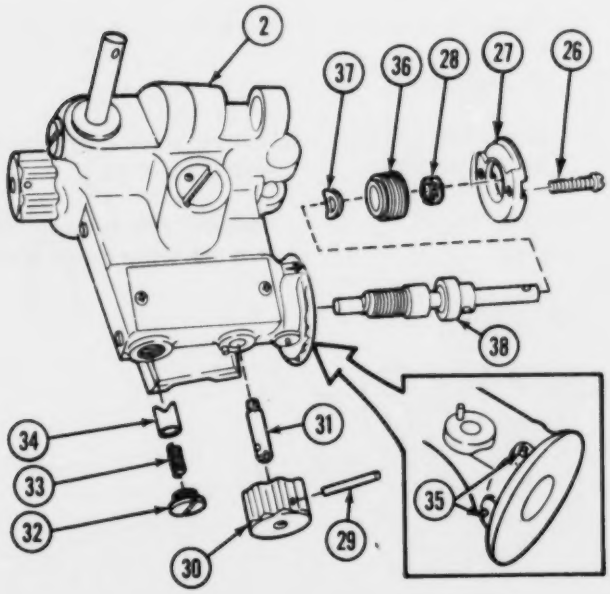
LOCATION	ITEM	ACTION

DISASSEMBLY (CONT)

WARNING

The lamp unit (27) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

7	a.	Screw (26), lamp unit (27), and preformed felt (28)	Unscrew two screws (26). Remove lamp unit (27) and preformed felt (28). Discard felt (28).
	b.	Spring pin (29), knob (30), and shaft (31)	Drive spring pin (29) from knob (30). Remove knob (30) and shaft (31).
	c.	Cap (32), spring (33), and plunger (34)	Unscrew cap (32) and remove spring (33) and plunger (34).
	d.	Setscrew (35) and retainer (36)	Loosen two setscrews (35) and remove retainer (36) with a spanner wrench.
	e.	Washer (37)	Remove washer (37).
	f.	Worm shaft (elevation) (38)	Release worm shaft (38) by turning clockwise. Remove from telescope mount (2).



LOCATION	ITEM	ACTION

TRITIUM (H_3)

WARNING

Components containing radioactive material (Tritium (H_3) are positioned under control dial (42). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

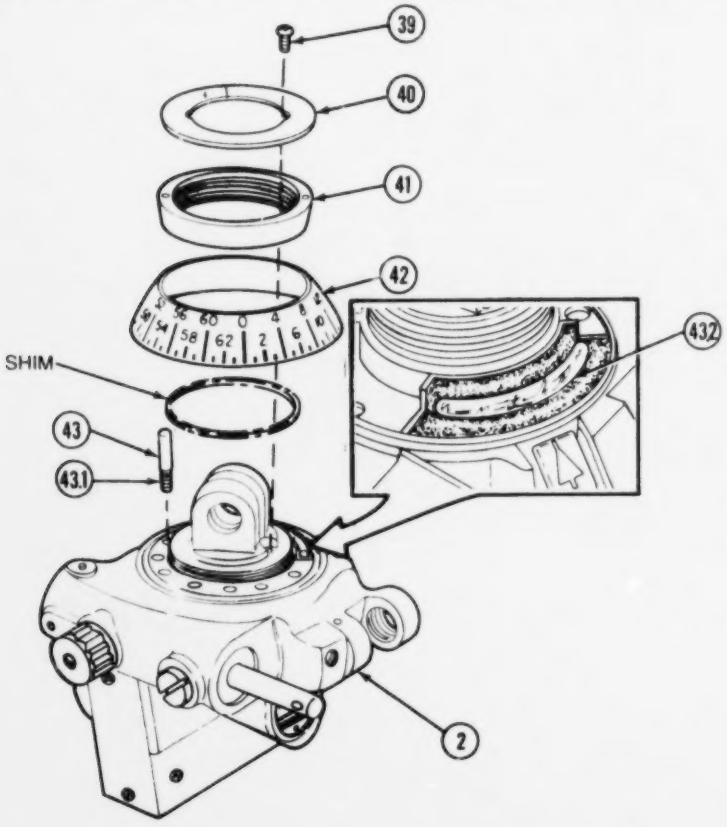
8	a.	Screw (39) and pointer dial (40)	Unscrew two screws (39) and remove pointer dial (40).
	b.	Conical nut (41)	Unscrew conical nut (41) with a spanner wrench.
	c.	Control dial (azimuth scale) (42) and plunger (43) with spring (43.1)	Remove control dial (42) and five plungers (43) with springs (43.1) from telescope mount (2). Discard plungers (43) and springs (43.1).

CAUTION

Radioluminous lamp (43.2) must not be loose.

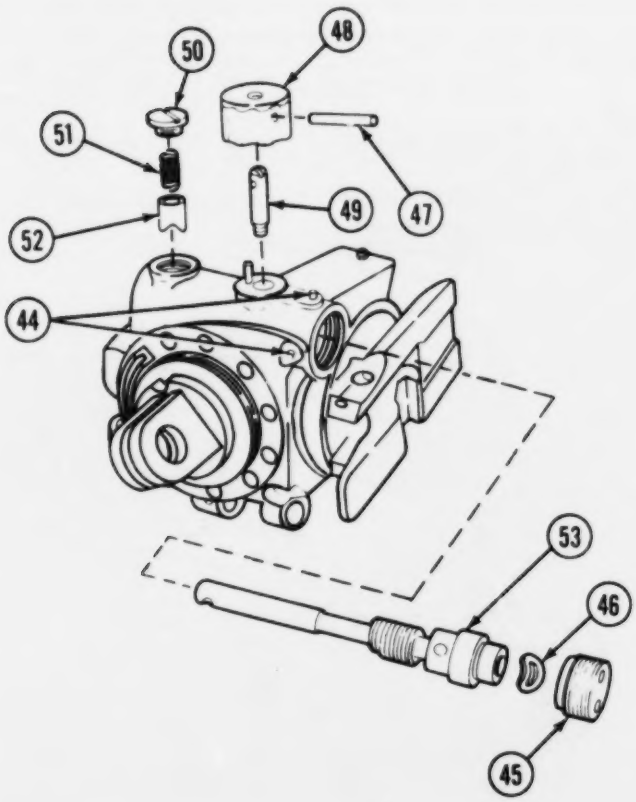
NOTE

Telescope mounts with C780000 series serial numbers will contain a shim as shown in the illustration. If the shim is present on disassembly, it must be installed on reassembly.



2-9. TELESCOPE MOUNT MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
DISASSEMBLY (CONT)		
9	a. Setscrew (44), retainer (45), and washer (46)	Loosen two setscrews (44) and remove retainer (45) and washer (46).
	b. Spring pin (47) and knob (48)	Drive spring pin (47) from knob (48) and remove knob.
	c. Shaft (49)	Unscrew and remove shaft (49).
	d. Cap (50), spring (51), and plunger (52)	Unscrew and remove cap (50), spring (51), and plunger (52).
	e. Worm shaft (53)	Twist worm shaft (53) counterclockwise to disengage gears. Remove worm shaft (53).

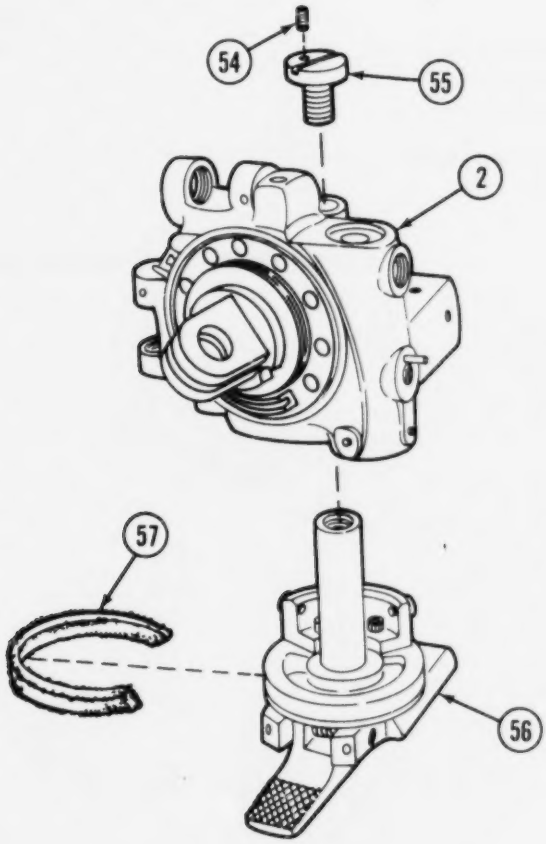


LOCATION	ITEM	ACTION

WARNING

The telescope mount (2) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

10	a. Setscrew (54) and screw (55)	Remove setscrew (54) and screw (55).
	b. Sector gear (56) and preformed felt (57)	Remove sector gear (56) and felt (57) from telescope mount (2). Discard felt (57).



2-9. TELESCOPE MOUNT MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

CLEANING AND LUBRICATION

CAUTION

The telescope mount should not be completely immersed in solvent in order to prevent solvent from contacting tritium components and grease on components that are not disassembled.

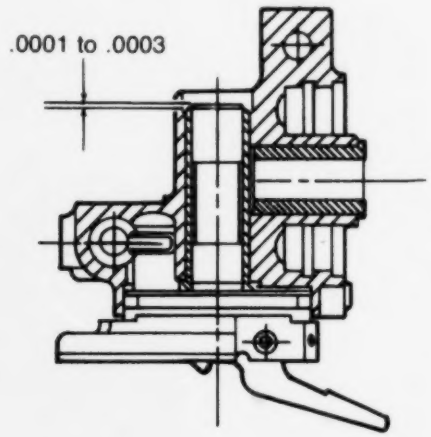
Telescope Mount	Clean all components using cleaning compound (item 3, app C).

REPAIR

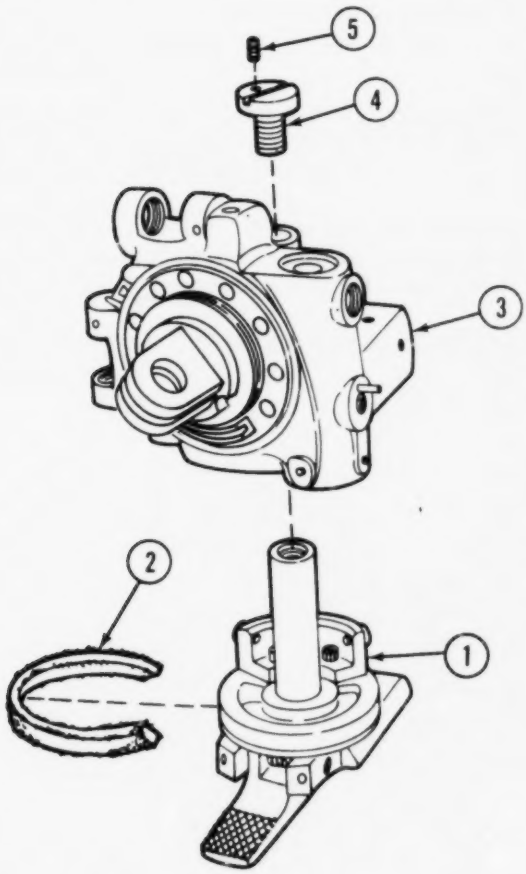
Telescope Mount	Replace unserviceable components.

NOTE

If gear replacement is required, gear sector must be machine lapped.

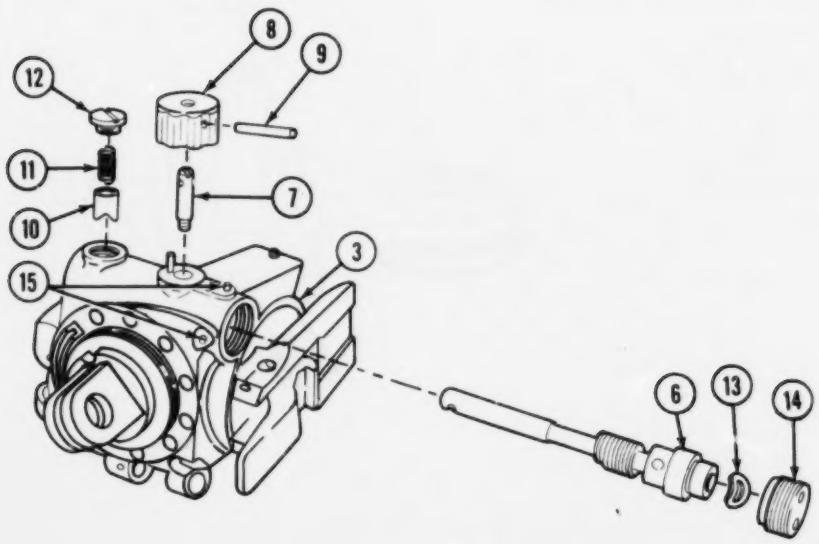


LOCATION	ITEM	ACTION
REASSEMBLY		
1 Telescope Mount	a. Sector gear (1) and preformed felt (2)	Apply aircraft grease (item 6, app C) to gears on sector gear (1) and new felt (2) and install on sector.
	b. Telescope mount (3) and screw (4)	Orient and place sector gear (1) in telescope mount (3). Apply aircraft grease (item 6, app C) to screw (4). Install and tighten screw (4) and aline hole in screw (4) with setscrew hole in sector gear (1).
	c. Setscrew (5)	Apply sealing compound (item 8, app C) to setscrew (5). Install and tighten.



2-9. TELESCOPE MOUNT MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
REASSEMBLY (CONT)		
2	a. Worm shaft (6)	Apply aircraft grease (item 6, app C) to worm shaft (6). Insert worm shaft (6) in telescope mount (3) while turning clockwise to mesh with sector gear.
	b. Shaft (7)	Screw shaft (7) into the threaded hole in the slip collar on worm shaft (6).
	c. Knob (8)	Place knob (8) on shaft (7) and turn clockwise until it stops.
	d. Spring pin (9)	Slip knob (8) on shaft (7) and aline hole in shaft (7) with hole in knob (8). Drive spring pin (9) into hole. If knob does not lock worm shaft, reposition knob 180 degrees.
	e. Plunger (10)	Apply aircraft grease (item 6, app C) to plunger (10).
	f. Spring (11) and cap (12)	Install plunger (10) and spring (11). Apply sealing compound (item 8, app C) to cap (12) and install.
	g. Washer (13) and retainer (14)	Apply aircraft grease (item 6, app C) to washer (13) and sealing compound (item 8, app C) to retainer (14). Install washer (13) and secure assembly with retainer (14).
	h. Setscrew (15)	Apply sealing compound (item 8, app C) to setscrew (15). Install and tighten setscrews (15).



LOCATION	ITEM	ACTION

WARNING

The telescope mount (3) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

CAUTION

Radioluminous lamp (16.2) must not be loose.

NOTE

The lampholder must be tight in retaining ring. If it is loose, evacuate mount to depot.

The black holes in the top view indicate the holes where the five plungers (16) and springs (16.1) are installed.

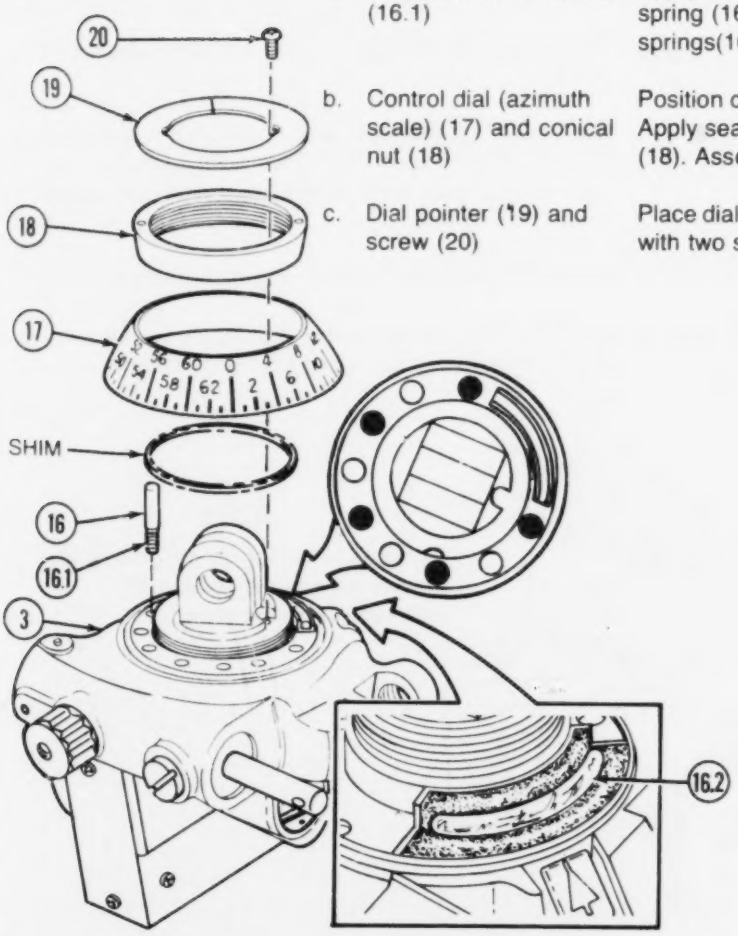
If the shim shown in the illustration was present on disassembly, it must be installed on reassembly. If the shim has been lost or damaged, it can't be replaced. Conical nut (18) has been redesigned so that it does not require a shim. Order new conical nut (18) and control dial (azimuth scale) (17) and reassemble without shim.

3

a. Plunger (16) with spring (16.1) — Apply aircraft grease (item 6, app C) to plunger (16) and spring (16.1). Insert five new plungers (16) with springs(16.1) in telescope mount (3).

b. Control dial (azimuth scale) (17) and conical nut (18) — Position control dial (17) on plungers and springs (16). Apply sealing compound (item 9, app C) to conical nut (18). Assemble to telescope mount (3) and tighten.

c. Dial pointer (19) and screw (20) — Place dial pointer (19) over conical nut (18) and secure with two screws (20).



2-9. TELESCOPE MOUNT MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

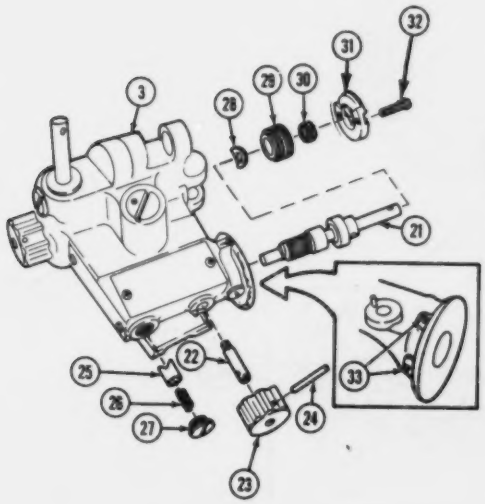
REASSEMBLY (CONT)

WARNING

TRITIUM (H_3)

The lamp unit (31) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

4	a.	Worm shaft (21)	Apply aircraft grease (item 6, app C) to worm shaft (21). Insert worm shaft (21) in telescope mount (3) while turning counterclockwise to mesh with sector gear.
	b.	Shaft (22)	Screw shaft (22) into the threaded hole in the slip collar on worm shaft (21).
	c.	Knob (23)	Place knob (23) on shaft (22) and turn clockwise until it stops.
	d.	Spring pin (24)	Slip knob (23) counterclockwise and aline hole in shaft (22) with hole in knob (23). Drive spring pin (24) into hole. If knob does not lock the worm shaft, reposition knob 180 degrees.
	e.	Plunger (25)	Apply aircraft grease (item 6, app C) to plunger (25).
	f.	Spring (26) and cap (27)	Install plunger (25) and spring (26). Apply sealing compound (item 8, app C) to cap (27) and install.



NOTE

When installing lamp unit (31), make sure light source is directly under arrow.

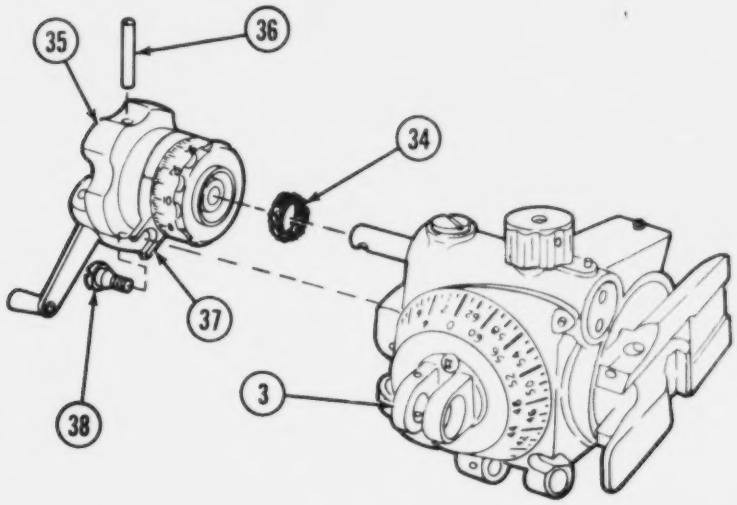
LOCATION	ITEM	ACTION
	g. Washer (28) and retainer (29)	Apply aircraft grease (item 6, app C) to washer (28) and install. Secure assembly with retainer (29).
	h. Preformed felt (30), lamp unit (31), and screw (32)	Apply aircraft grease (item 6, app C) to new preformed felt (30) and place preformed felt (30) with lamp unit (31) over worm shaft (21). Apply sealing compound (item 8, app C) to screws (32) and install.
	i. Setscrew (33)	Apply sealing compound (item 8, app C) to two setscrews (33) and install.

WARNING

TRITIUM (H_3)

Knob assembly (35) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

5	a. Preformed felt (34) and knob assembly (35)	Apply aircraft grease (item 6, app C) to new preformed felt (34) and place on shaft of telescope mount (3). Place knob assembly (35) on the shaft of telescope mount (3).
	b. Spring pin (36)	Aline hole in knob assembly (35) with hole in shaft. Drive in spring pin (36).
	c. Dial pointer (37)	Aline dial pointer (37) with the screw hole in telescope mount (3).
	d. Screw (38)	Apply sealing compound (item 8, app C) to threads of screw (38). Install screw (38) and tighten.



2-9. TELESCOPE MOUNT MAINTENANCE INSTRUCTIONS (CONT).

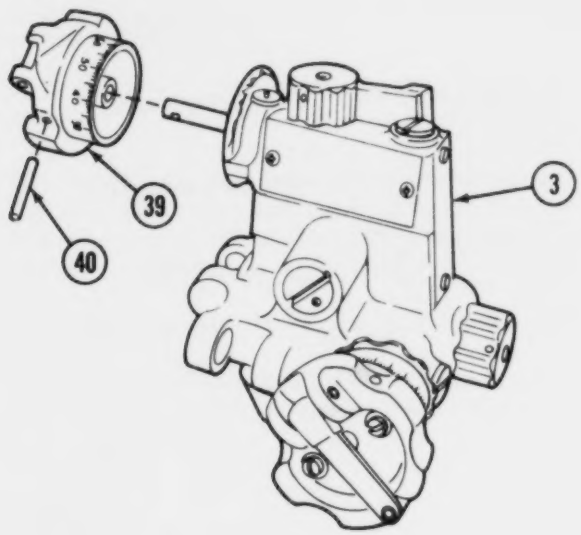
LOCATION	ITEM	ACTION

REASSEMBLY (CONT)

WARNING

Components containing radioactive material (Tritium H_3) are positioned under control dial (39). Care should be used to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

6	a.	Knob assembly (elevation) (39)	Place knob assembly (39) on the elevation shaft of telescope mount (3).
	b.	Spring pin (40)	Aline hole in knob assembly (39) with hole in shaft. Drive in spring pin (40).

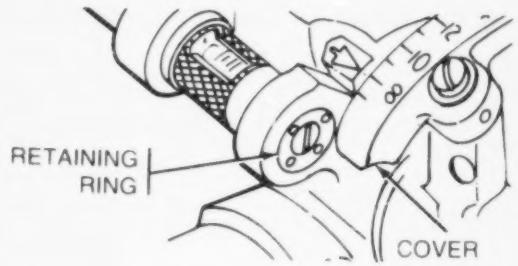


LOCATION	ITEM	ACTION

WARNING

The level assembly (42) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

When installing level assembly with spanner wrench when scale (elevation) is still attached, be extra careful not to crack plastic cover on scale. If cover is cracked or broken, radioactive material will leak out.



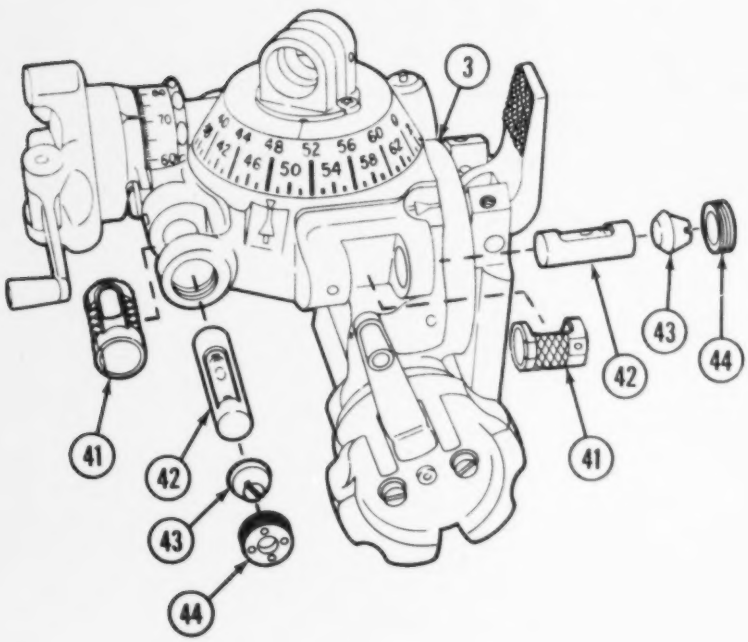
7

a. Cover (41), level assembly (42), and eccentric (43)

Place one or both covers (41), level assemblies (42), and eccentrics (43) in telescope mount (3).

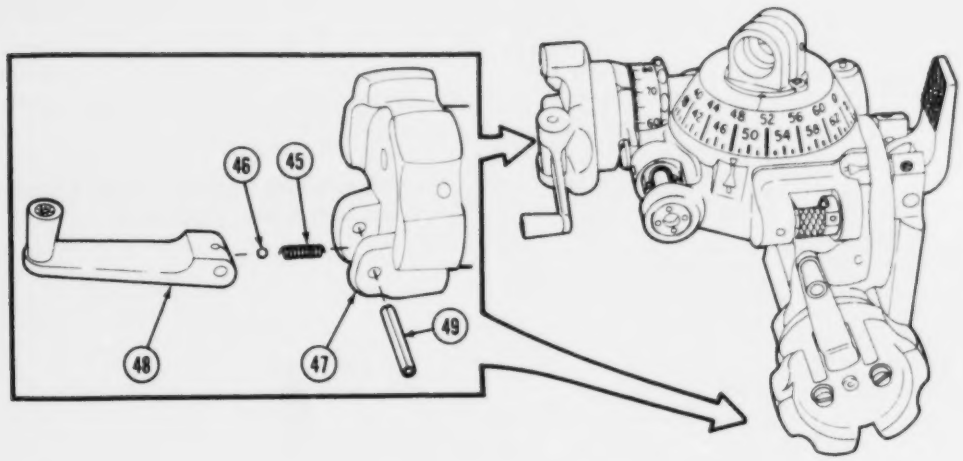
b. Retaining ring (44)

Install retaining ring (44). Leave it loose for adjustment of levels in a later procedure.



2-9. TELESCOPE MOUNT MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
REASSEMBLY (CONT)		
8	a. Spring (45), ball (46), and knob (47)	Apply aircraft grease (item 6, app C) to ball (46). Place spring (45) and ball (46) in hole in knob (47).
	b. Hand crank (48)	Apply aircraft grease (item 6, app C) to hand crank (48). Position hand crank (48) over knob (47) with ball (46) in detent in hand crank (48).
	c. Spring pin (49)	Press hand crank (48) into knob (47) and secure by driving in spring pin (49).

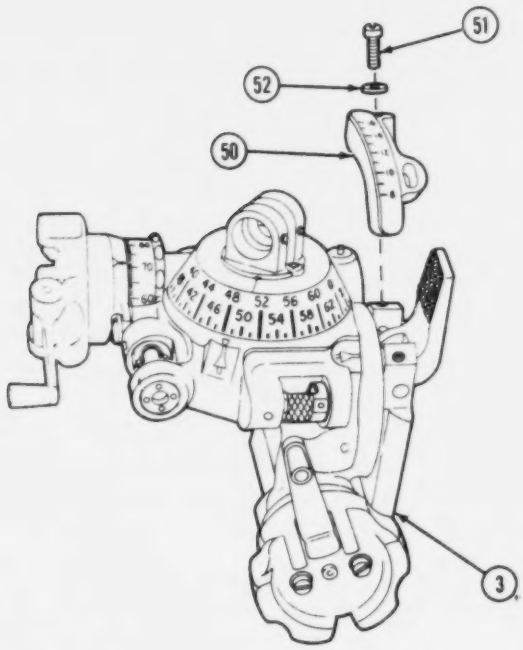


LOCATION	ITEM	ACTION

WARNING

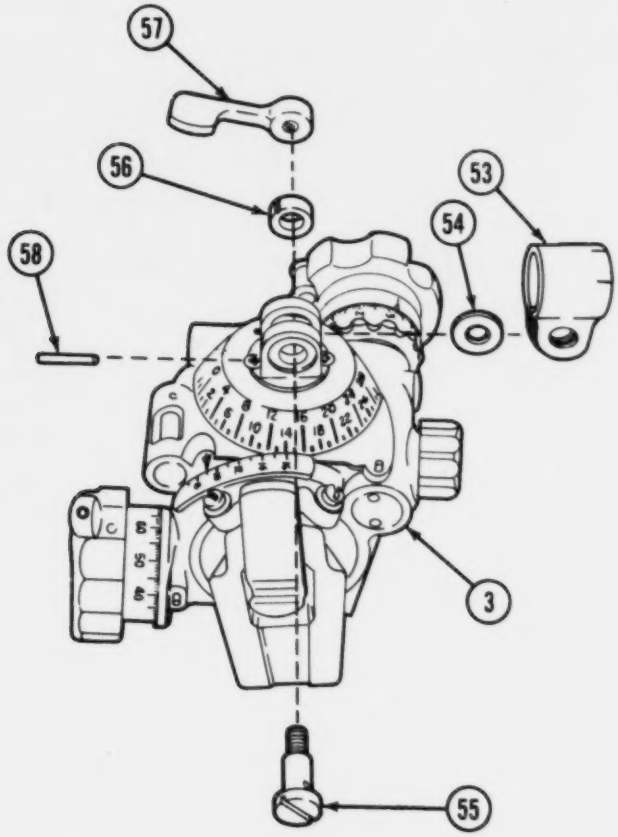
The elevation scale (50) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

9	Elevation scale (50), screw (51), and washer (52)	Place scale (50) on telescope mount (3) and secure using two screws (51) and flat washers (52).
10	a. Loop clamp (53) and washer (54)	Place loop clamp (53) and washer (54) in telescope mount (3).



2-9. TELESCOPE MOUNT MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
REASSEMBLY (CONT)		
	b. Shoulder bolt (55) and bushing (56)	Apply aircraft grease (item 6, app C) to shoulder bolt (55) and insert shoulder bolt (55) and bushing (56).
	c. Lock-release lever (57)	Screw shoulder bolt (55) into lock-release lever (57).
		Aline hole in shoulder bolt (55) with hole in telescope mount (3) and check that lock-release lever (57) will retain loop clamp (53) when tightened and allow it to swivel when released. Adjust as necessary.
	d. Spring pin (58)	Drive spring pin (58) through telescope mount (3).



2-10. DIAL CONTROL MAINTENANCE INSTRUCTIONS.

This task covers:
a. Disassembly
b. Repair
c. Reassembly

INITIAL SETUP

Tools
Screwdriver set
Retaining ring pliers

Materials
Cleaning compound (item 3, app C)

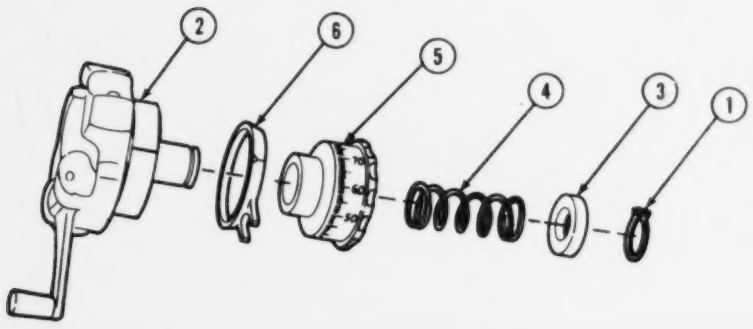
DISASSEMBLY

WARNING

The dial control (5) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

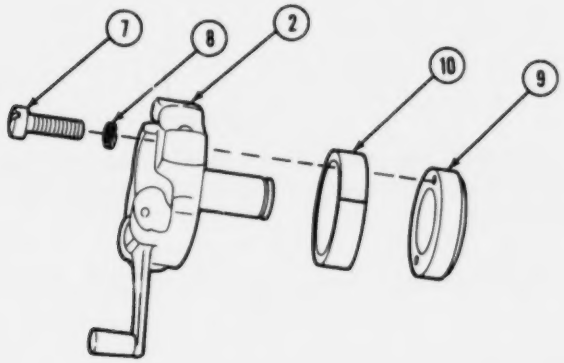
Spring (4) is under pressure. Be careful when removing retaining ring (1).

1 Dial Control	a. Retaining ring (1) and knob assembly (2)	Using retaining ring pliers, remove retaining ring (1) from knob assembly (2).
	b. Spring collar (3), spring (4), dial control (scale assembly) (5), and dial pointer (6)	Slide spring collar (3), spring (4), dial control (scale assembly) (5), and dial pointer (6) from knob assembly (2).



2-10. DIAL CONTROL MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
DISASSEMBLY (CONT)		
	NOTE Hand crank installation applies to both azimuth and elevation knobs. Hand crank is only installed if it was removed as shown on page 2-9.	
2	a. Screw (7) and washer (8)	Remove two screws (7) and washers (8) from knob assembly (2).
	b. Retaining plate (9) and scale index (10)	Remove retaining plate (9) and scale index (10) from knob assembly (2) and separate.

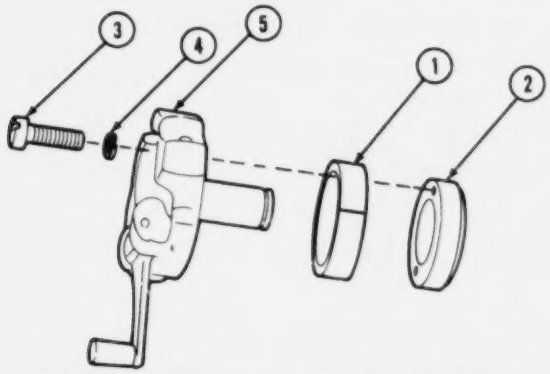


LOCATION	ITEM	ACTION
REPAIR		
Dial Control		Replace unserviceable components.
REASSEMBLY		

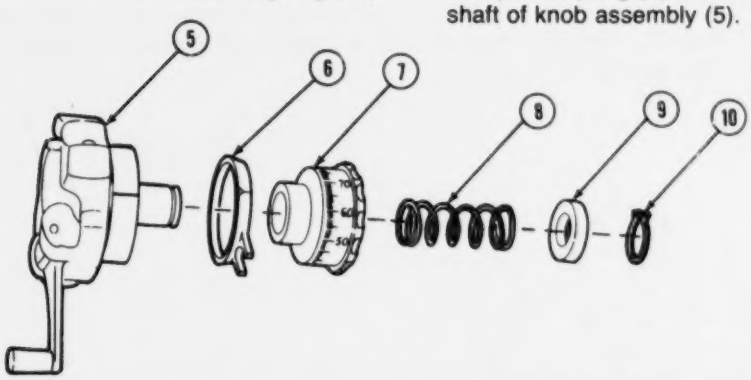
WARNING

The dial control (7) contains radioactive material (Tritium H_3). Care should be exercised to ensure glass vials are not broken. Refer to radiation hazard warning inside front cover for detailed procedures.

1	Dial Control	a. Scale index (1) and retaining plate (2)	Position scale index (1) on retaining plate (2).
		b. Screw (3), washer (4), and knob assembly (5)	Using two screws (3) and two washers (4) assemble the scale (1) and retaining plate (2) to the knob assembly (5).



2		a. Dial pointer (6), dial control (scale assembly) (7), spring (8), and spring collar (9)	Position dial pointer (6) and dial control (scale assembly) (7) on shaft of knob assembly (5) followed by spring (8) and spring collar (9).
		b. Retaining ring (10)	Compress spring (8) and install retaining ring (10) on shaft of knob assembly (5).



2-11. KNOB ASSEMBLY MAINTENANCE INSTRUCTIONS.

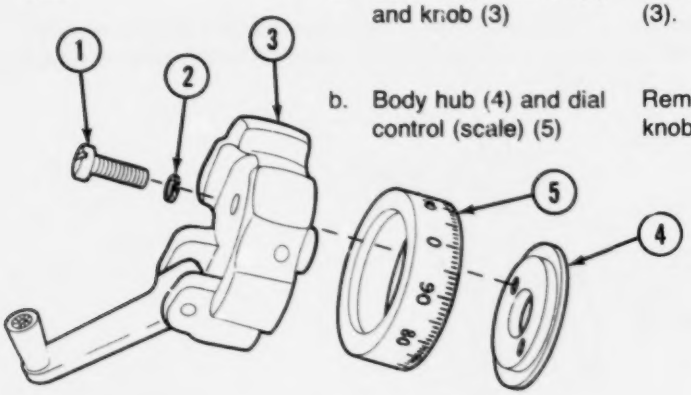
This task covers:
a. Disassembly
b. Repair
c. Reassembly

INITIAL SETUP

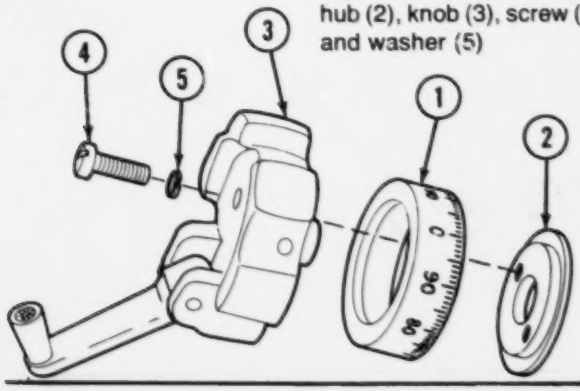
Tools
Screwdriver set

Materials
Cleaning compound (item 3, app C)

LOCATION	ITEM	ACTION
DISASSEMBLY		
Knob	a. Screw (1), washer (2), and knob (3)	Remove two screws (1) and two washers (2) from knob (3).
	b. Body hub (4) and dial control (scale) (5)	Remove body hub (4) and dial control (scale) (5) from knob (3).



REPAIR		
Knob		Replace unserviceable components.
REASSEMBLY		
Knob	Dial control (scale) (1), body hub (2), knob (3), screw (4), and washer (5)	Position dial control (scale) (1) and body hub (2) in knob (3) and secure with two screws (4) and two washers (5).



2-12. TELESCOPE MOUNT CROSS-LEVELING AND ELEVATION TEST.

This task covers:
a. Setup
b. Adjustment
c. Test

INITIAL SETUP

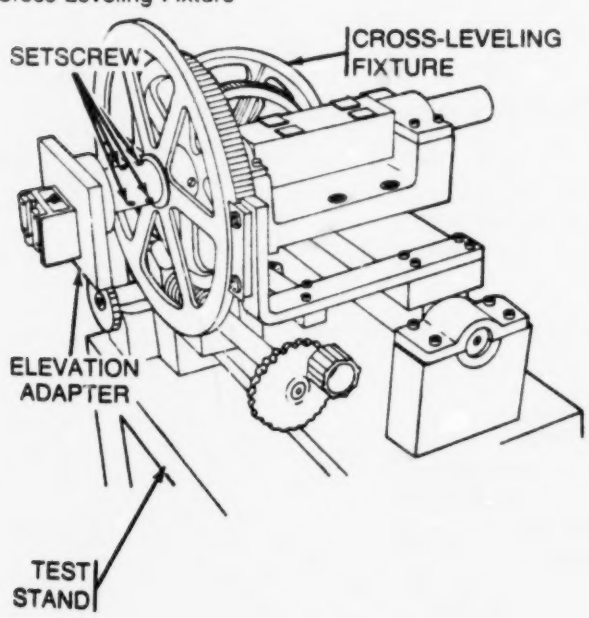
Equipment Required
Elevation and cross-leveling fixture 6523553
Elevation adapter 11750708
Gunner's quadrant 8228867 or 11731007
Dioptometer 7680631
Dioptometer mounting bracket
Target
Precision level
Plumbline
Machine adapter
Spanner wrench

Materials/Parts
Sealing compound (item 8, app c)
Sealing compound (item 9, app c)

LOCATION	ITEM	ACTION

SETUP

Cross-Leveling Fixture



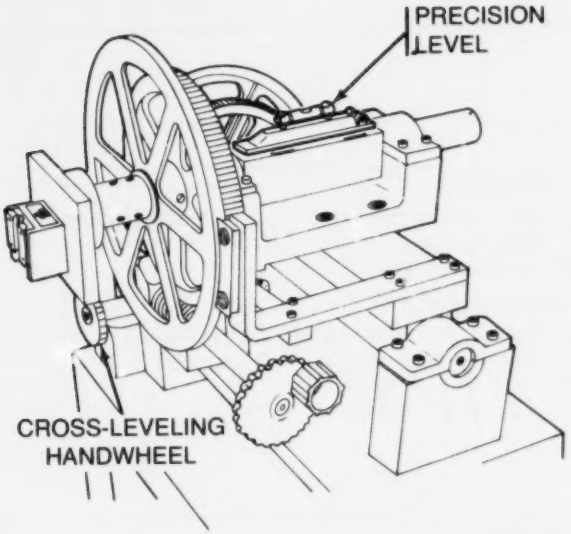
a. Place the cross-leveling fixture on a test stand at a suitable height for personnel to sight on a target while looking through a dioptometer mounted in its mounting bracket. Assure that there is ample access to all sides of the cross-leveling fixture.

b. Mount elevation adapter on the end of fixture upper shaft. Tighten setscrews lightly.

2-12. TELESCOPE MOUNT CROSS-LEVELING AND ELEVATION TEST (CONT).

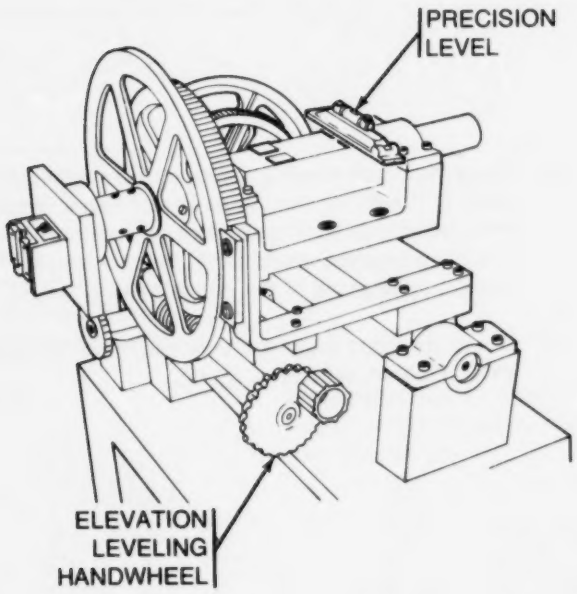
LOCATION	ITEM	ACTION

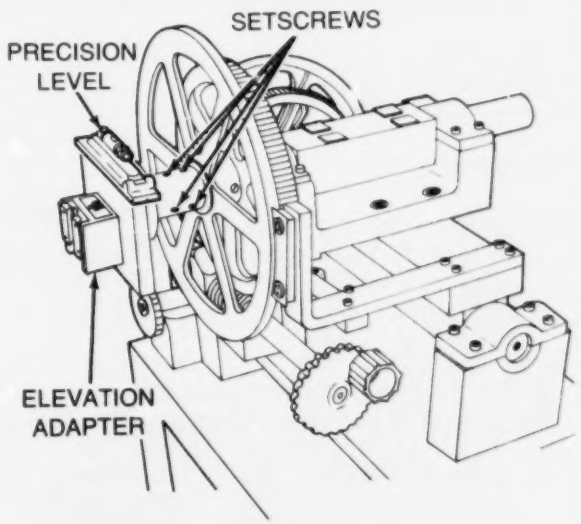
SETUP (CONT)



c. Place a precision level crosswise on the upper section shaft. Turn the cross-leveling handwheels until the bubble in the precision level is centered. Rotate precision level 90 degrees on upper section shaft and level the fixture in elevation.

d. Loosen setscrews at rear sleeve of elevation adapter. Place precision level on flat of the mounting pad on the elevation adapter. With the heel of hand, tap the top of the elevation adapter on the high side until precision level bubble is centered. Tighten setscrews to hold the position.



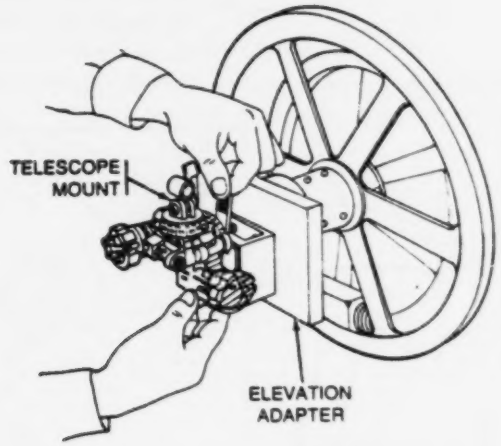


LOCATION	ITEM	ACTION

ADJUSTMENT

Telescope Mount Level

a. Place telescope mount on elevation adapter and latch.



NOTE

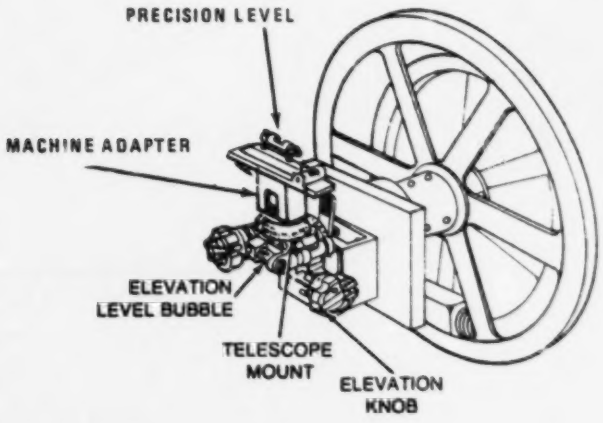
Recheck fixture cross-level after mounting the telescope mount on the elevation adapter.

The coarse elevation scale will be set to 800 mils with backlash removed from the elevation mechanism for rotation in depression.

b. Place a precision level on the machine adapter with locking knob released, level telescope mount by rotating the mount elevation knob.

NOTE

A normal level elevation reading for this mount is 800 mils.

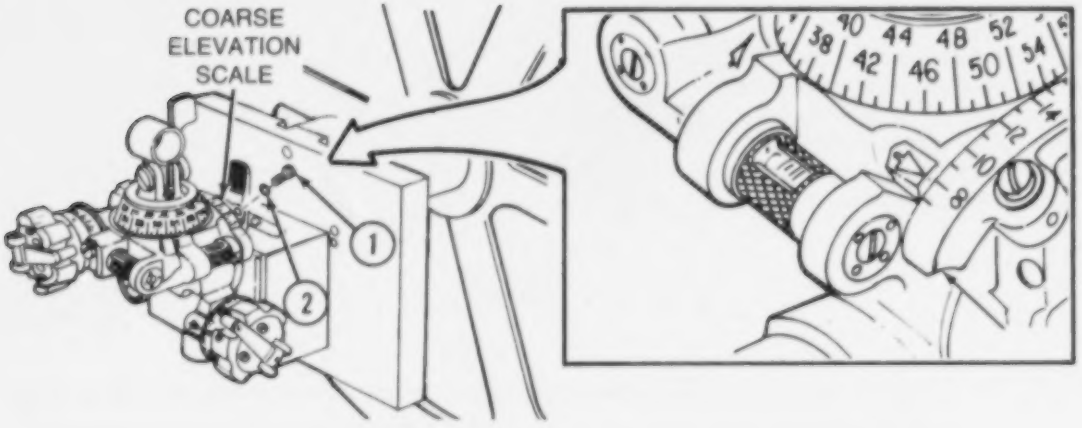


2-12. TELESCOPE MOUNT CROSS-LEVELING AND ELEVATION TEST (CONT).

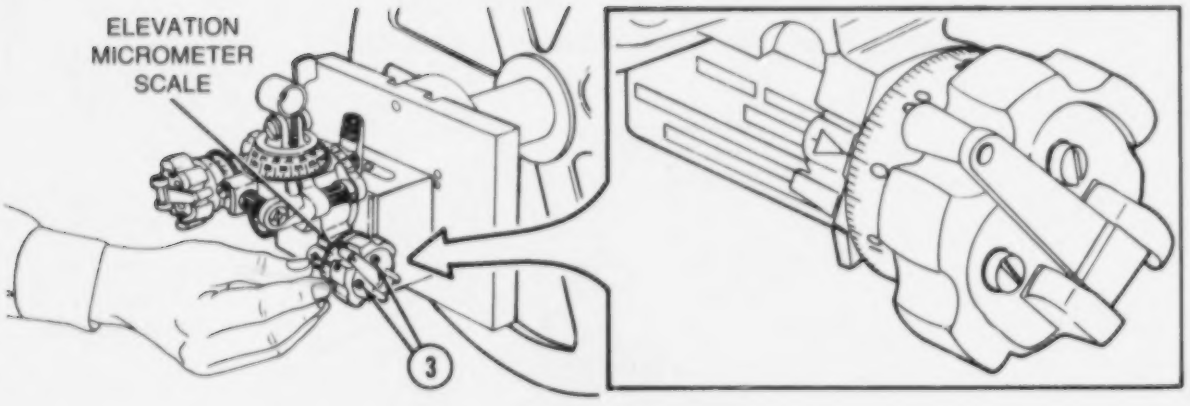
LOCATION	ITEM	ACTION

ADJUSTMENT (CONT)

c. Remove two screws (1) and two washers (2). Fill elongated holes with sealing compound (item 8, app C). Reinstall screws (1) and washers (2). Set coarse elevation scale to 800 mils. Tighten screws (1).



d. Loosen two screws (3) and zero elevation micrometer scale. Tighten screws (3).

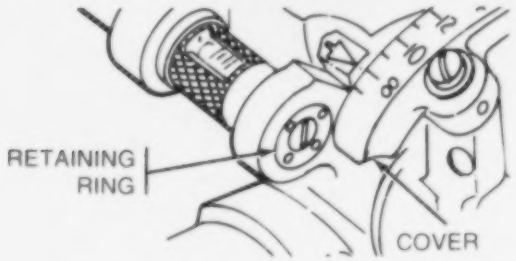


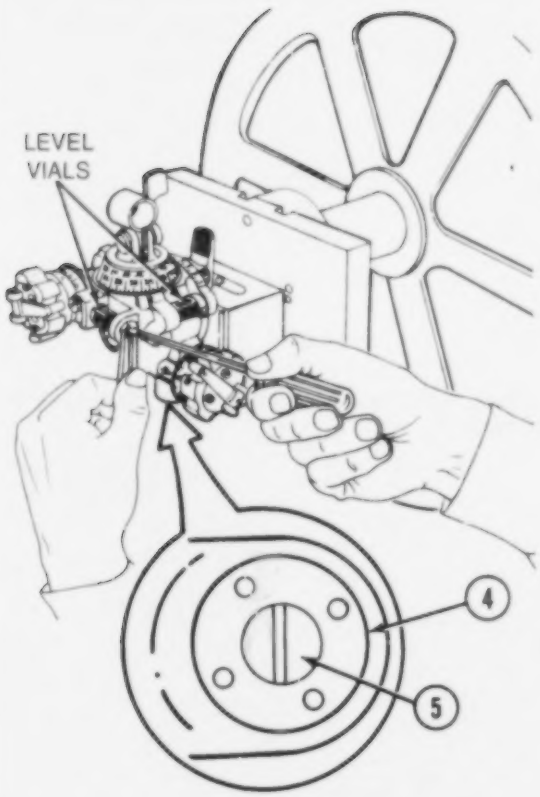
LOCATION	ITEM	ACTION

TRITIUM (H_3)

WARNING

When using spanner wrench on retaining ring, be extra careful not to crack plastic cover on scale (elevation). If cover is cracked or broken, radioactive material will leak out.





e. Loosen retaining ring (4) of level vial and apply sealing compound (item 9, app C) to threads.

f. Place screwdriver through hole in retaining ring (4) into slot in eccentric (5) and turn until level bubble centers.

g. Hold eccentric (5) stationary and tighten retaining ring (4).

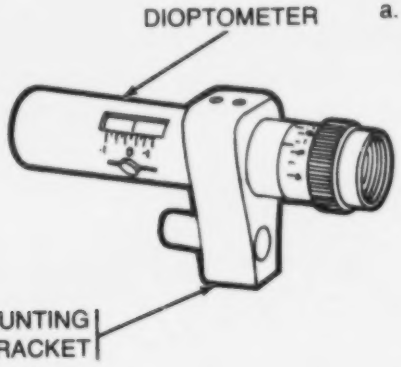
h. Assure that the cross-leveling fixture and mount are level and repeat steps e, f, and g for second level vial.

2-12. TELESCOPE MOUNT CROSS-LEVELING AND ELEVATION TEST (CONT).

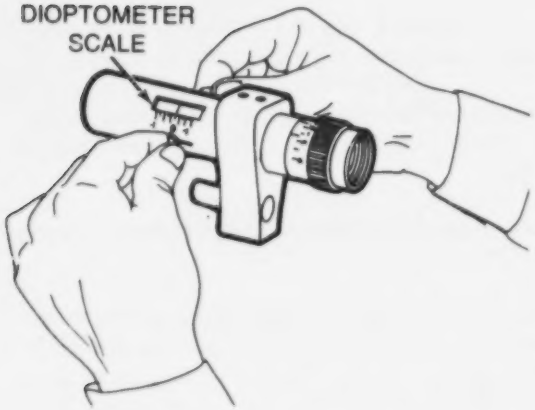
LOCATION	ITEM	ACTION

TEST

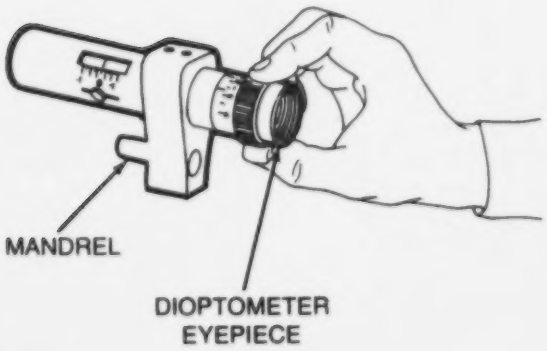
1 Telescope Mount Elevation and Plumb Travel



a. Install dioptometer in mounting bracket.



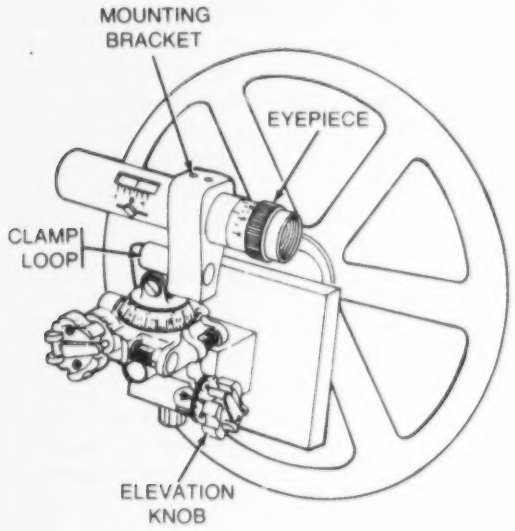
b. Set dioptometer adjustment scale to zero.



c. Adjust dioptometer eyepiece for best focus of reticle patterns.

LOCATION	ITEM	ACTION

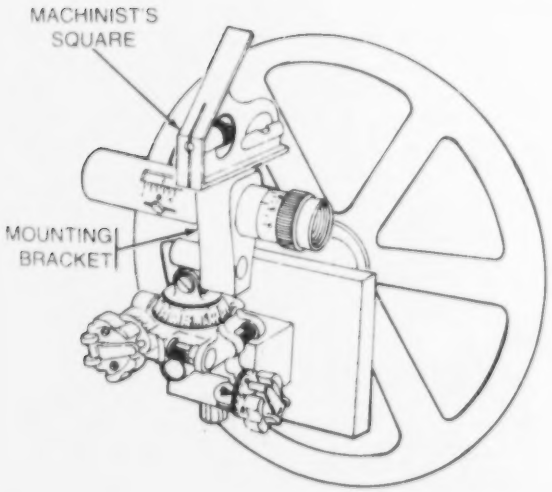
d. Insert mandrel of the mounting bracket into the clamp loop on the mount with eyepiece toward the elevation knob.

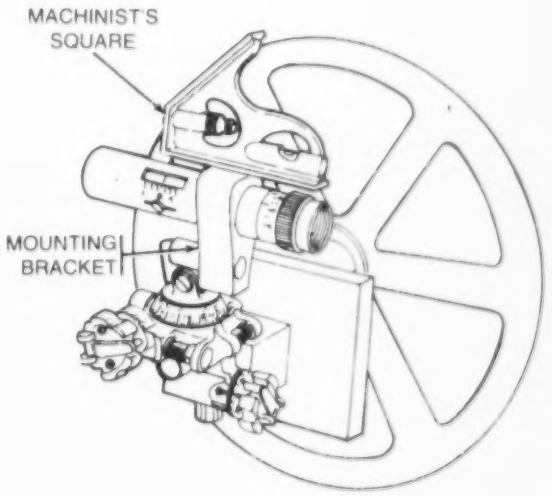


NOTE

Check the fixture to assure that it is level in cant and elevation before any tests are performed.

e. Place a machinist's square on top of mounting bracket and cross-level.

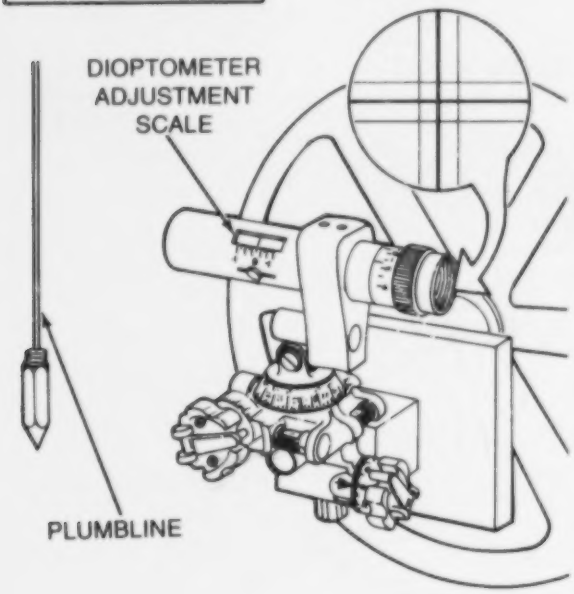




2-12. TELESCOPE MOUNT CROSS-LEVELING AND ELEVATION TEST (CONT).

LOCATION	ITEM	ACTION

TEST (CONT)



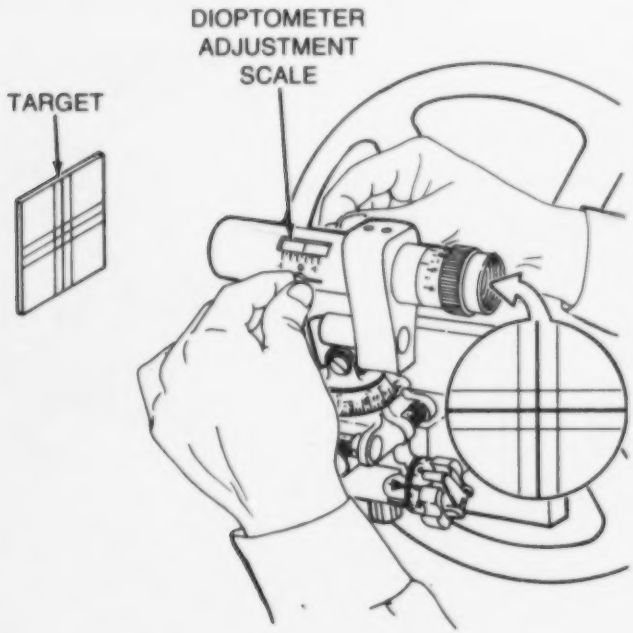
f. Focus dioptometer on a plumbline by means of the dioptometer adjustment scale.

g. While sighting on a plumbline, rotate dioptometer in mounting bracket until the dioptometer vertical reticle line is plumb. Tighten setscrews.

h. Position target at 9 feet.

i. Focus dioptometer on target by means of the dioptometer adjustment scale.

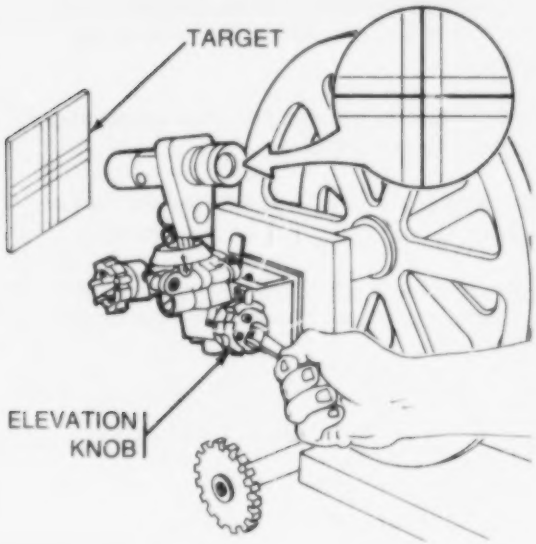
j. Elevate target until the intersecting point of the horizontal and vertical target line is coincident to the intersecting point of the dioptometer horizontal and vertical reticle lines.



LOCATION	ITEM	ACTION

NOTE

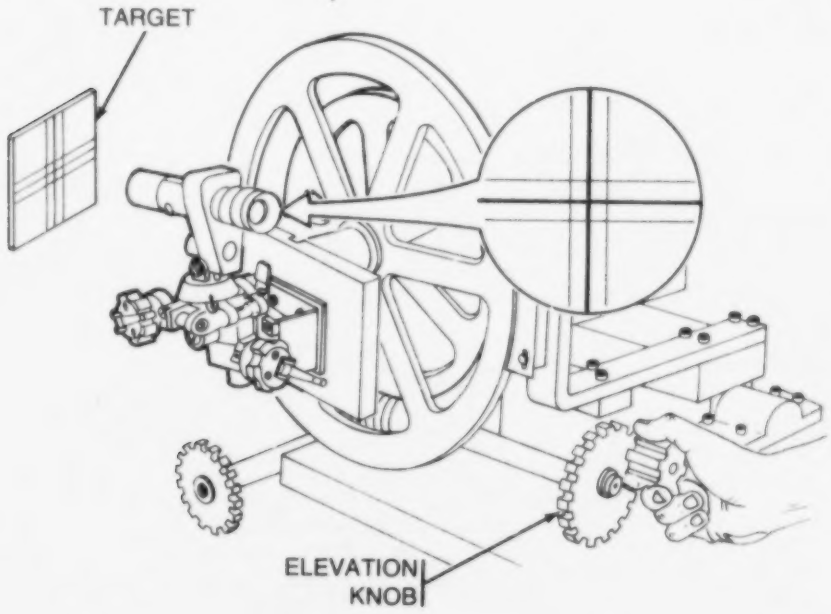
The line of sight shall track a plumb line within 1.0 mil when depressed a minimum of 800 mils and elevated a minimum of 100 mils. The total lateral spread shall not exceed 1.0 mil. If the error is more than 1.0 mil, recheck the mount for proper assembly. If error still exceeds 1.0 mil return to depot maintenance.



k. While directing a line of sight through the center of the dioptometer reticle pattern to the vertical target, depress the line of sight of the mount 200 mils by means of its elevation knob.

l. Return the line of sight, through the dioptometer, to the horizontal target by elevating the cross-leveling fixture.

m. Repeat steps k and l until mount is at maximum depression.



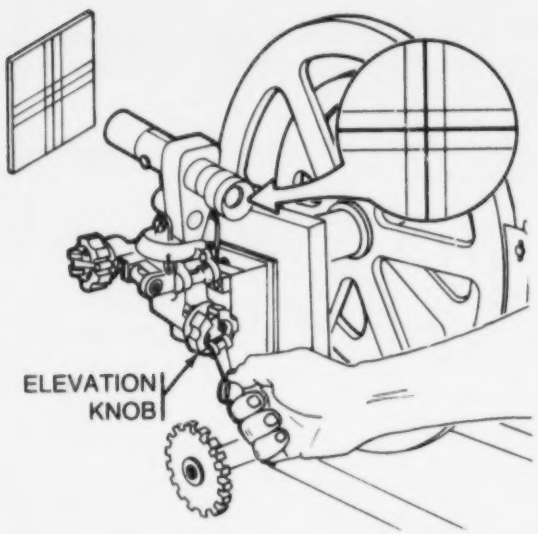
2-12. TELESCOPE MOUNT CROSS-LEVELING AND ELEVATION TEST (CONT).

LOCATION	ITEM	ACTION

TEST (CONT)

NOTE

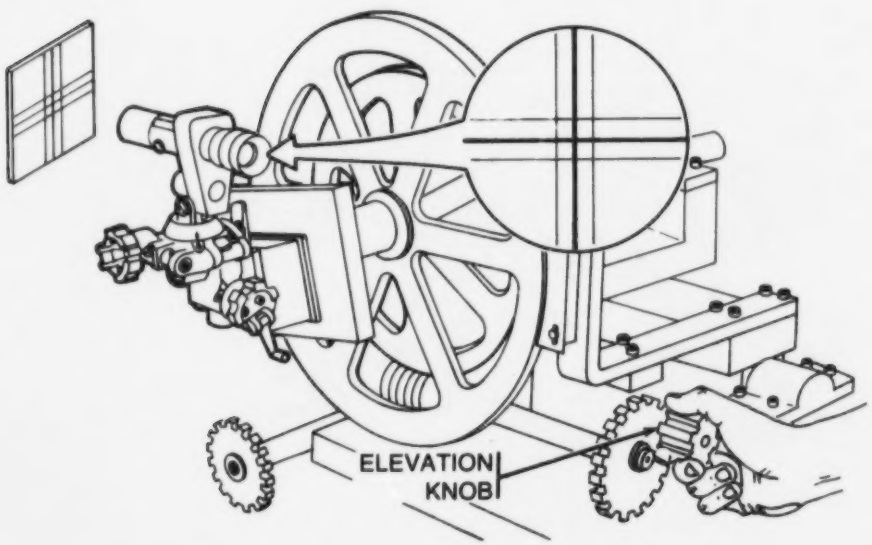
Line of sight should depress a minimum of 800 mils. If the mil reading is less than 800 mils, rezero the cross-leveling fixture and check for proper orientation of the mount and elevation scale, and repeat steps k, l and m. If 800 mils cannot be attained, return to depot.



n. Return mount to 800 mils and cross-leveling fixture to zero mils elevation.

o. By means of the elevation knob, elevate the line of sight of the mount to its maximum elevation.

p. Return the line of sight, through the dioptometer, to the horizontal plane by depressing the cross-leveling fixture.



LOCATION	ITEM	ACTION

NOTE

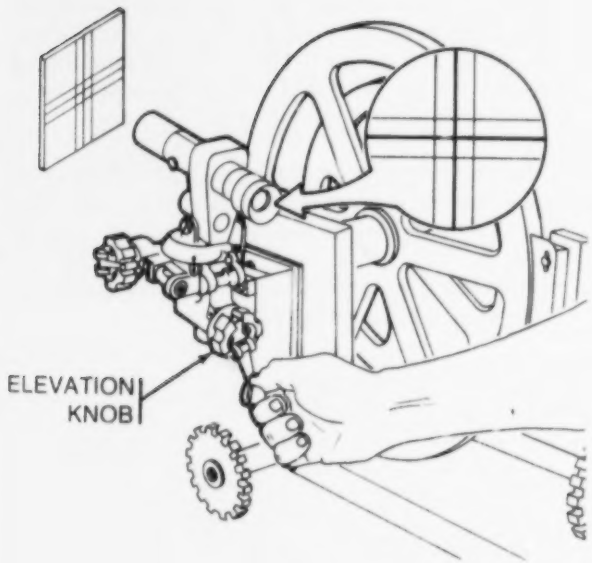
Line of sight should elevate a minimum of 100 mils. If the mil reading is less than 100 mils, rezero the cross-leveling fixture and check for proper orientation of the mount and elevation scale, and repeat steps n and o. If 100 mils cannot be attained, return to depot.

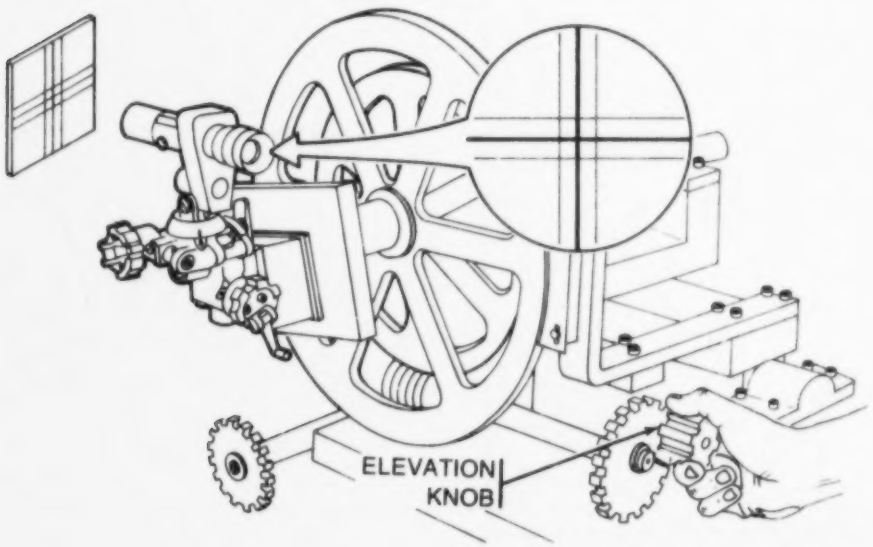
Steps a and b below will be repeated three times: once at 750, once at 1150, and once at 1550 mils.

2 Lateral displacement

a. With backlash removed and the dioptometer reticle pattern superimposed on the vertical line, track the vertical target line for about 50 mils using the elevation knob on the mount.

b. Reverse the elevation knob and track the vertical target line for about 50 mils without removing the backlash. The lateral displacement of the reticle pattern shall not exceed 0.5 mils.





2-12. TELESCOPE MOUNT CROSS-LEVELING AND ELEVATION TEST (CONT).

LOCATION	ITEM	ACTION

TEST (CONT)

NOTE

During the following procedure, verify at every 200 mil increment that the level vial centers within half a graduation.

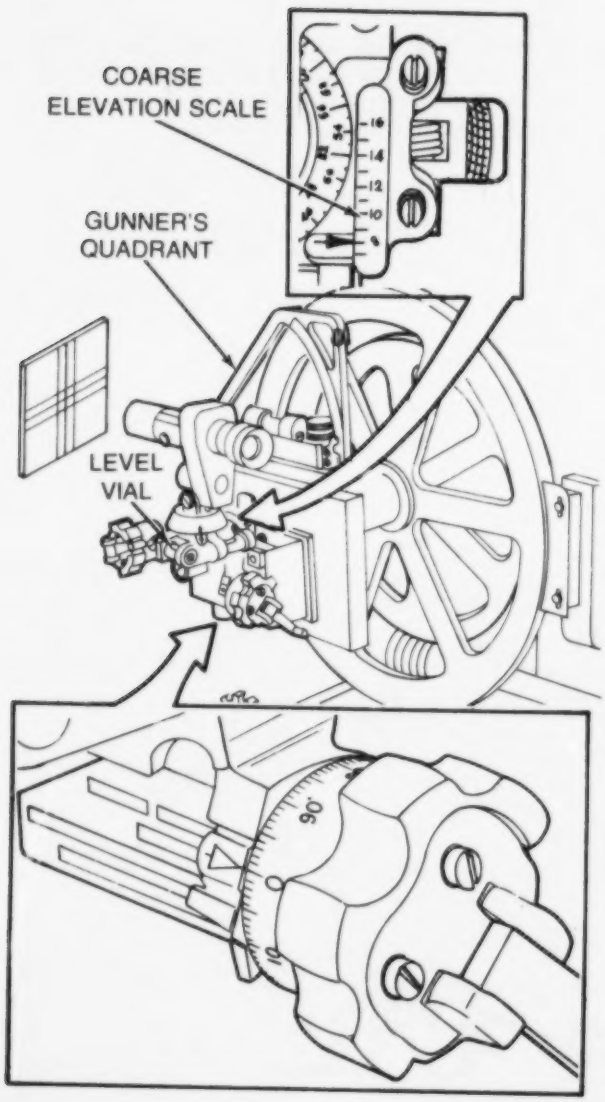
3 Elevation angular accuracy

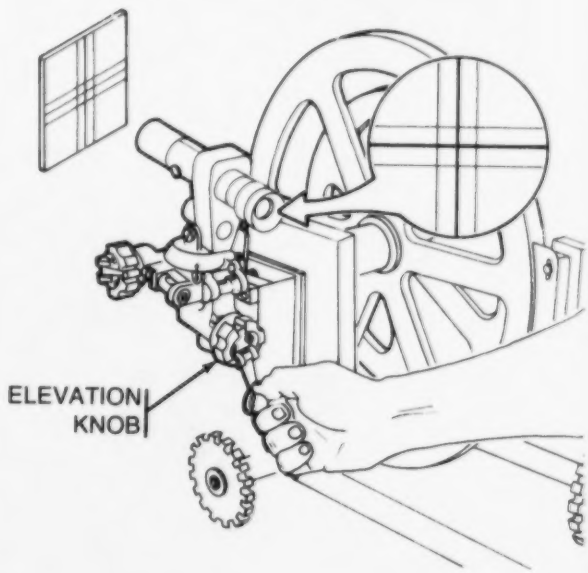
a. With backlash removed for fixture rotation in elevation, elevate the adapter to zero mils in elevation.

b. Verify the zero mils elevation position of the elevation adapter with the gunner's quadrant (place as shown on illustration). Verify that mount telescope coarse scale is 800 mils and micrometer scale is 0. Verify that level vial is centered.

c. With backlash removed for rotation of a line of sight in depression verify that the dioptometer reticle lines are superimposed on the target lines.

d. Depress the line of sight of the mount, by means of its elevation knob, to 1000 mils.



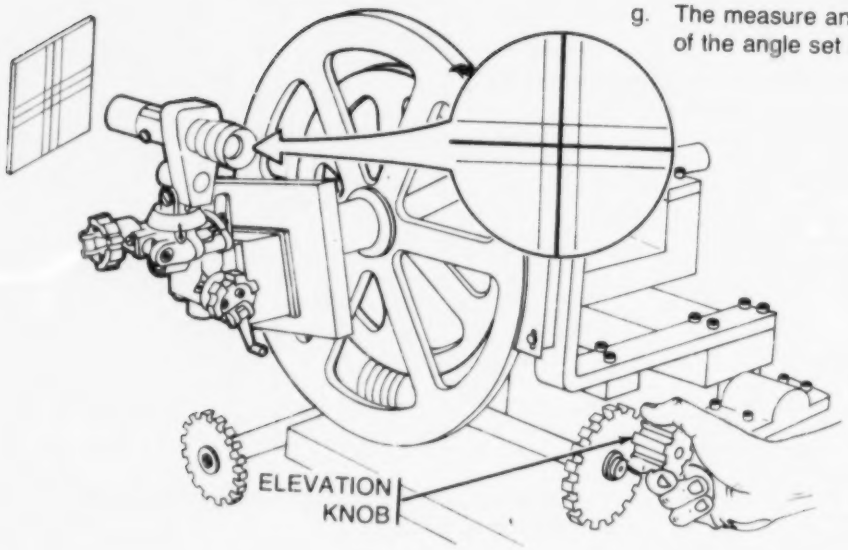


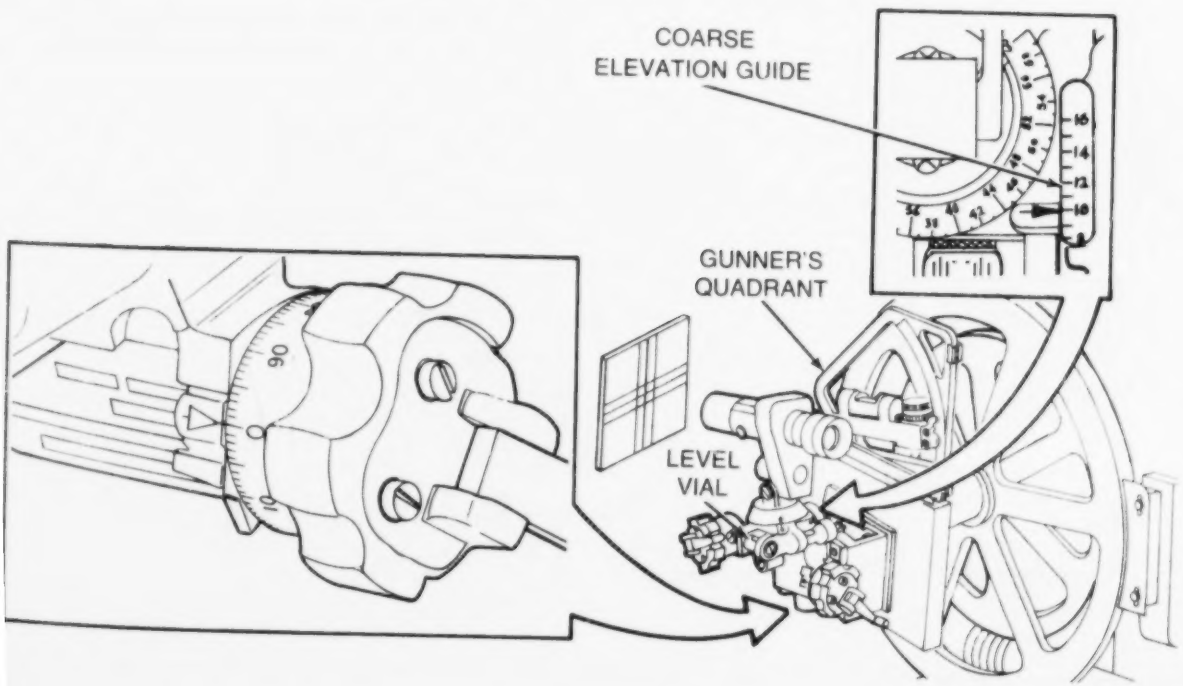
LOCATION	ITEM	ACTION

e. Using elevation knob on the cross-level fixture, return the line of sight of the mount to the horizontal plane until the dioptometer reticle lines are superimposed on the target line without overtravel.

f. Using the gunner's quadrant, measure the elevation angle of the adapter.

g. The measure angle should read within 1.0 mils of the angle set into the mount.

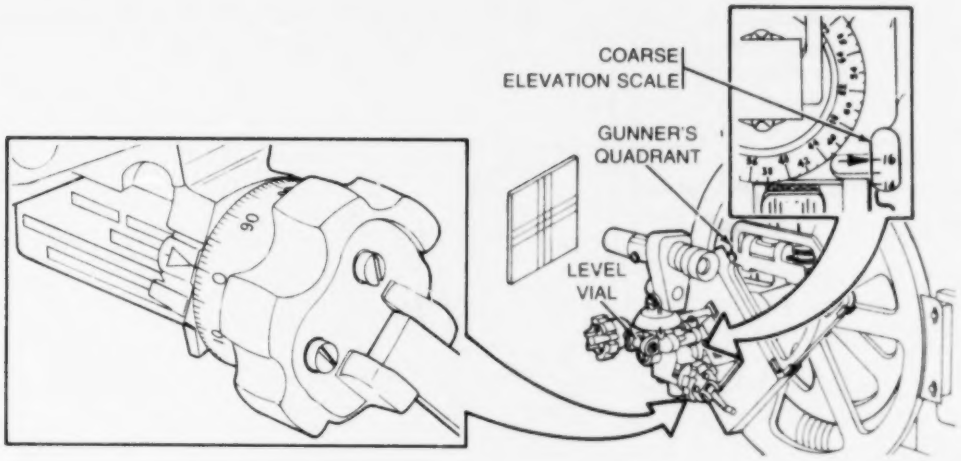




2-12. TELESCOPE MOUNT CROSS-LEVELING AND ELEVATION TEST (CONT).

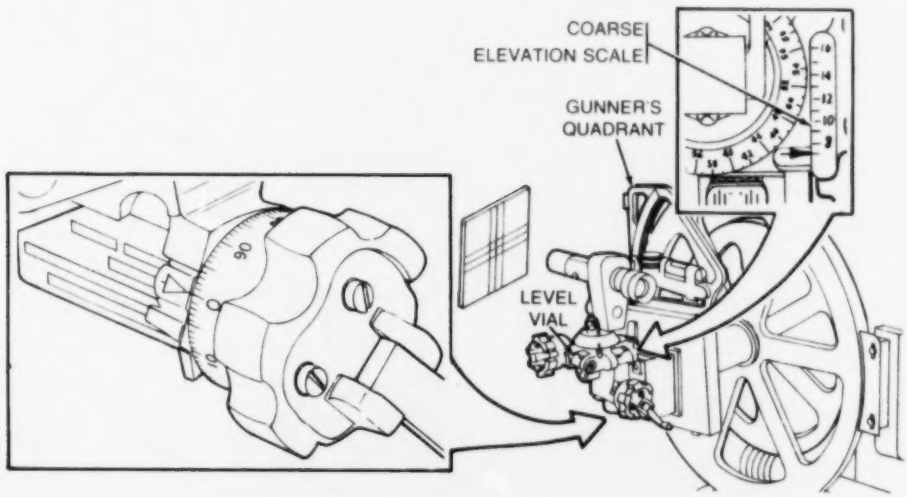
LOCATION	ITEM	ACTION
TEST (CONT)		

h. Record the elevation error and repeat the test at 1200, 1400, and 1600 mils recording error at each elevation.

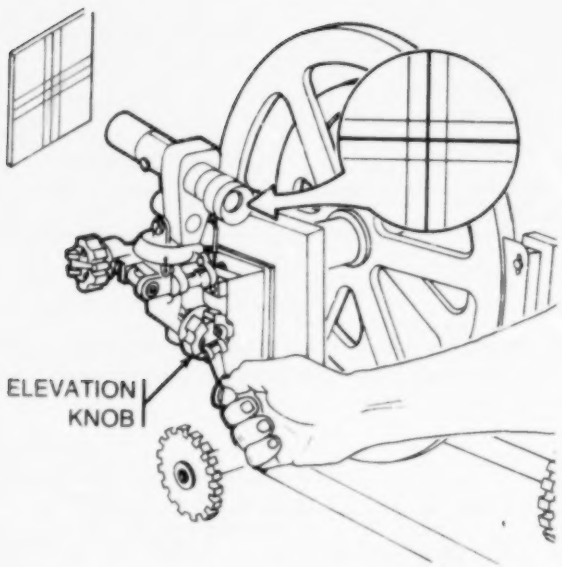


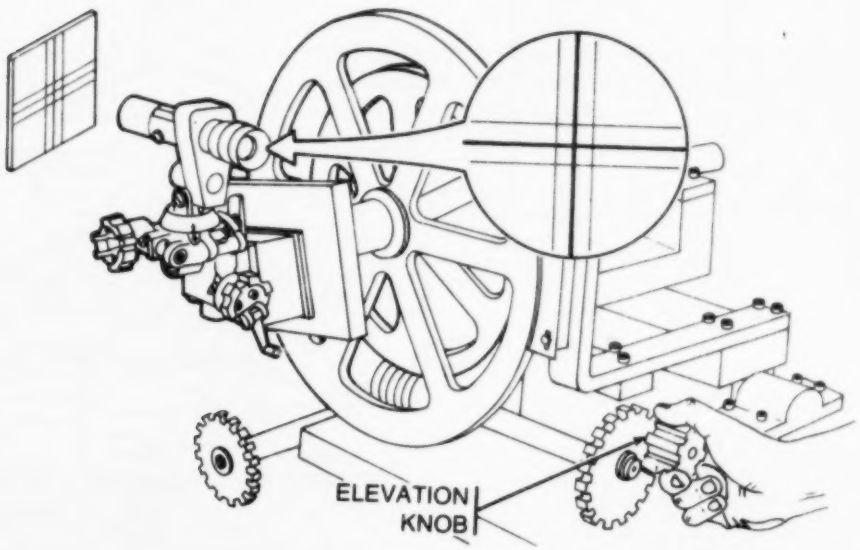
i. Return the mount setting to 800 mils and the fixture setting to 0 mils.

j. Elevate to 700 mils, repeat steps e through g of the test, and record errors. All readings should be within 1.0 mils.



LOCATION	ITEM	ACTION
4	Elevation backlash	a. At each of the five elevations, 700, 1000, 1200, 1400 and 1600 mils, record the mils setting when the reticle lines are in coincidence with the target lines. b. With backlash removed from the direction of travel, override the setting by 50 mils using the elevation knob on the mount, and return to the original setting and establish coincidence without overtravel. c. With backlash included, record the elevation mil values of elevation micrometer scale. d. Repeat step b at the other four elevations. e. At each selected elevation, add the elevation error to the backlash error. The total should not exceed 2 mils.





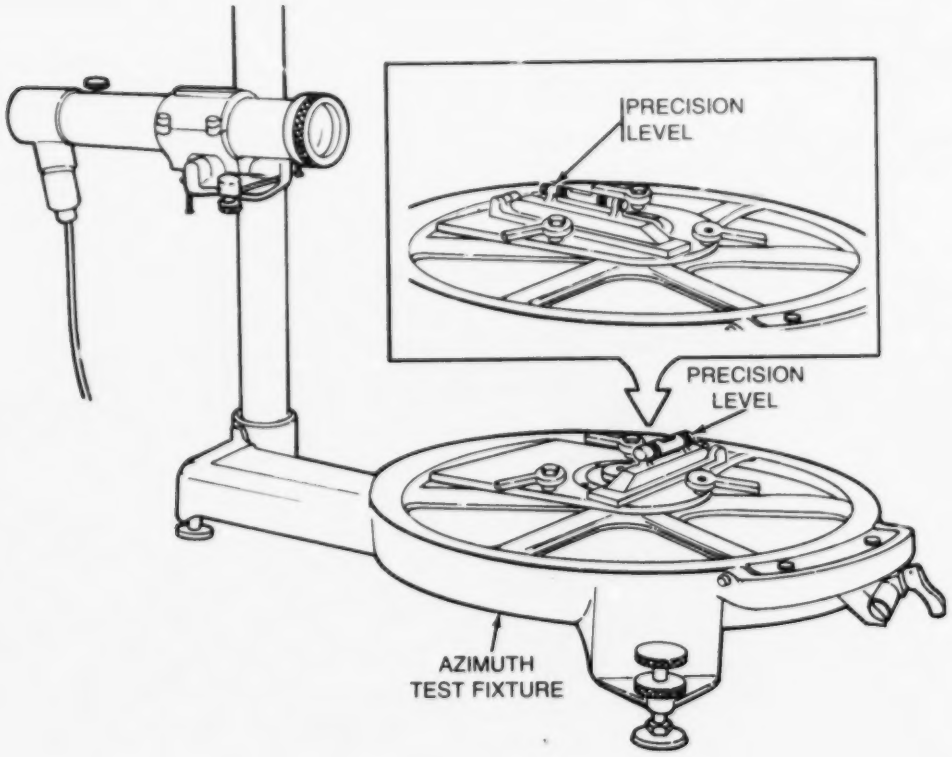
2-13. TELESCOPE MOUNT AZIMUTH TEST.

This task covers:
a. Setup
b. Orientation
c. Test

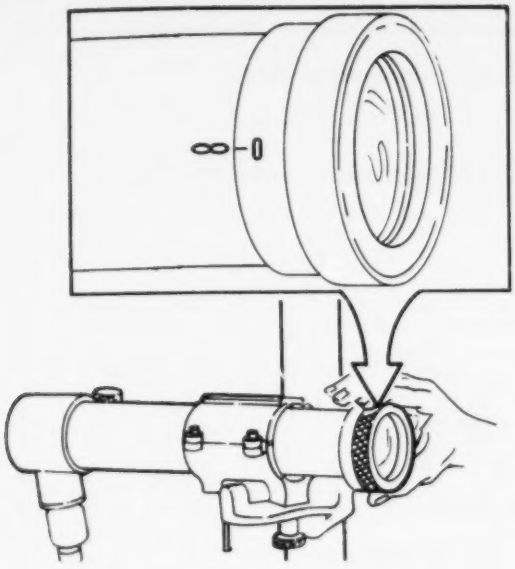
INITIAL SETUP

Equipment Required
Azimuth test fixture 7691596
Adapter 11750709
Alinement gage 11750712
Dioptometer
Plumbline
Precision level
Mounting bracket

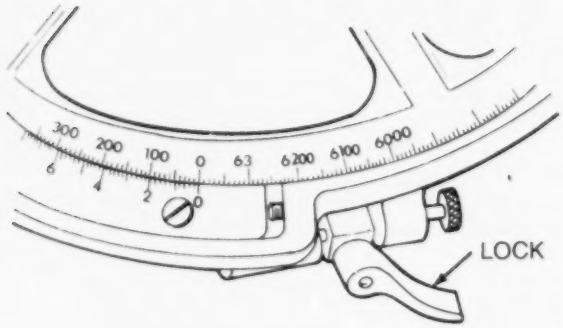
LOCATION	ITEM	ACTION
SETUP		
Azimuth Test Fixture		a. Place the azimuth test fixture on a test stand and cross level in the horizontal plane using a precision level.



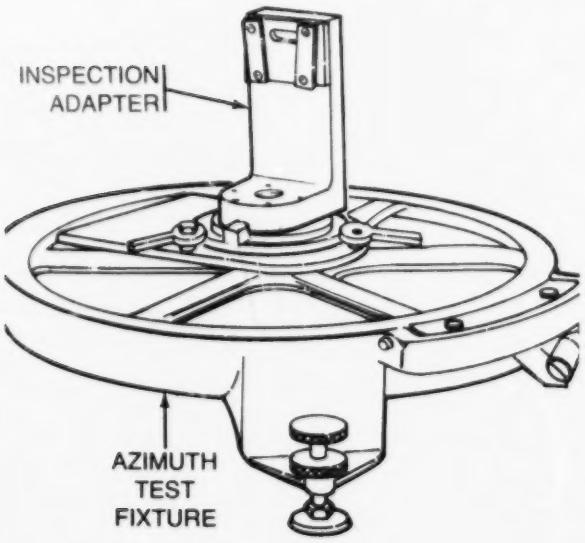
LOCATION	ITEM	ACTION



b. Set projector collimator at infinity.



c. Rotate the wheel assembly of the fixture to the zero azimuth setting and lock.



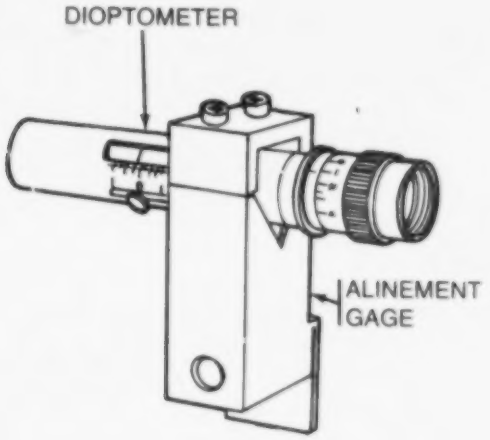
d. Position the inspection adapter on the azimuth fixture with the dovetail on the right side and lightly clamp the cam lock screws.

2-13. TELESCOPE MOUNT AZIMUTH TEST (CONT).

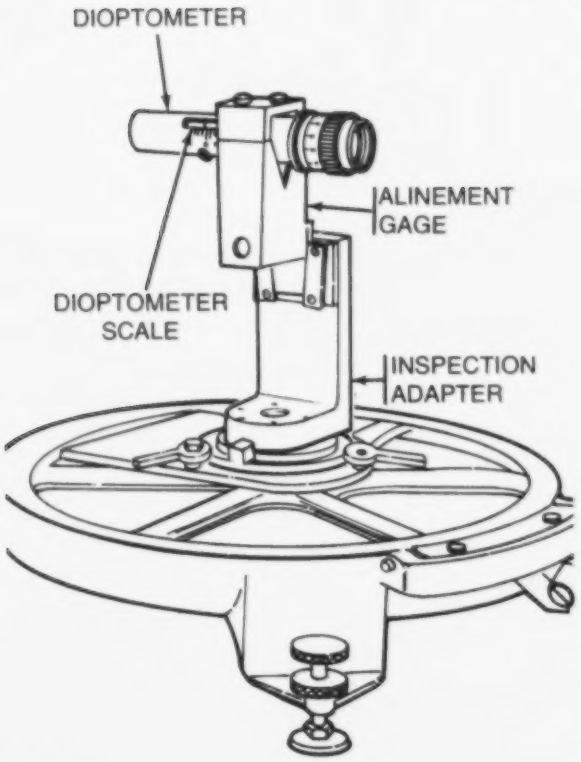
LOCATION	ITEM	ACTION

SETUP (CONT)

e. Install dioptometer on alinement gage.



f. Install the alinement gage with the dioptometer attached on the inspection adapter.

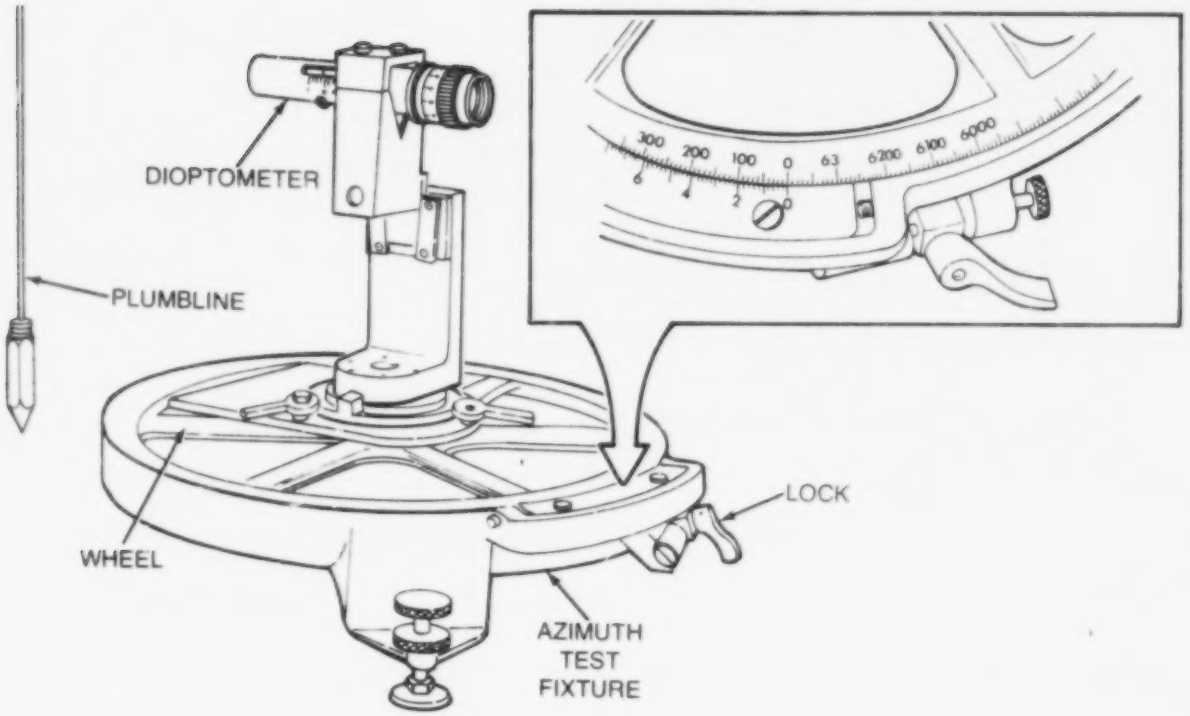


LOCATION	ITEM	ACTION

NOTE

Focus dioptometer by means of the dioptometer scale as necessary.

g. Loosen the wheel of the azimuth test fixture and aline the dioptometer on a plumb line. Plumb the dioptometer and return the wheel assembly to zero and lock the fixture.



2-13. TELESCOPE MOUNT AZIMUTH TEST (CONT).

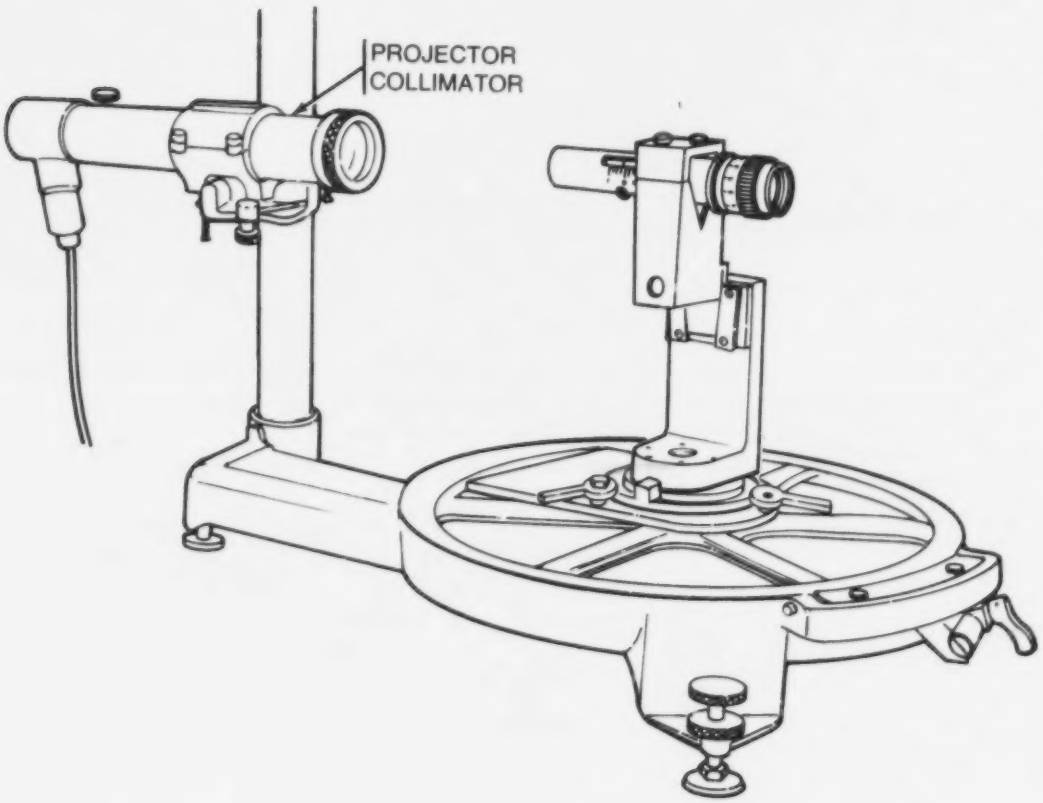
LOCATION	ITEM	ACTION

SETUP (CONT)

NOTE

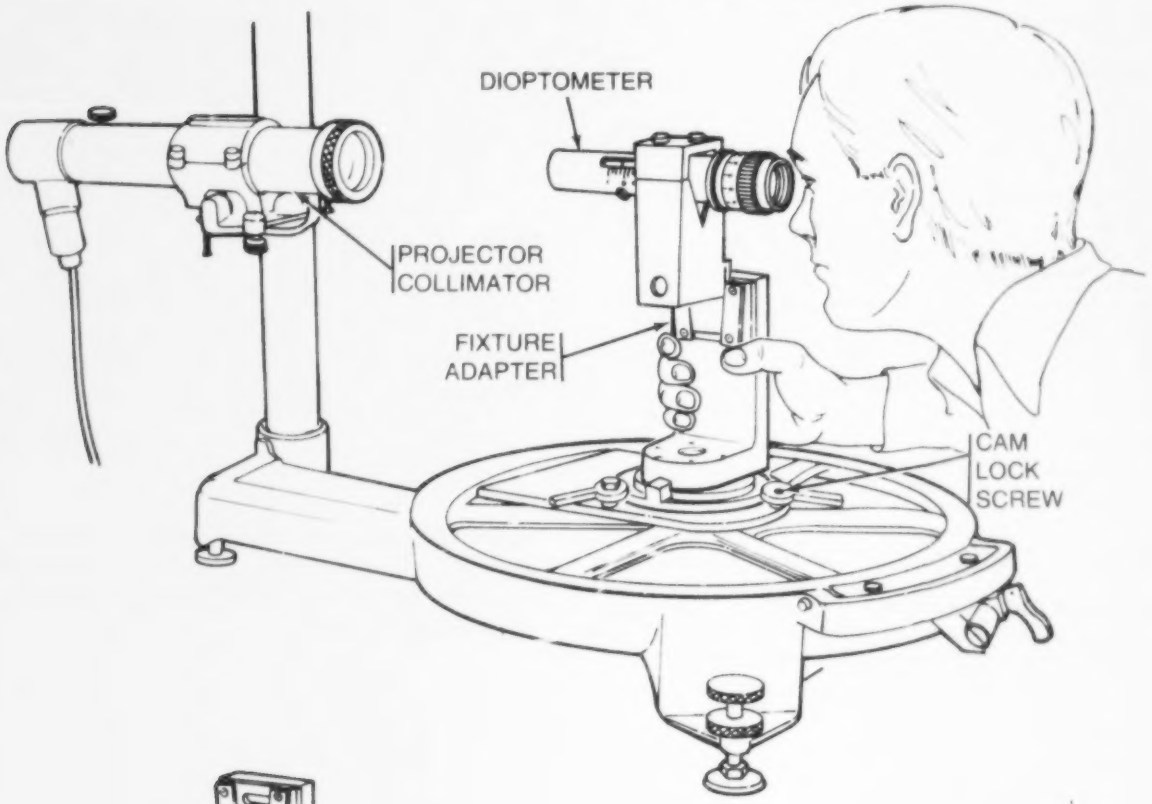
If the projector collimator reticle is not plumb, plumb it at this time.

It may be necessary to raise or lower the projector collimator when alining the reticles in step h.

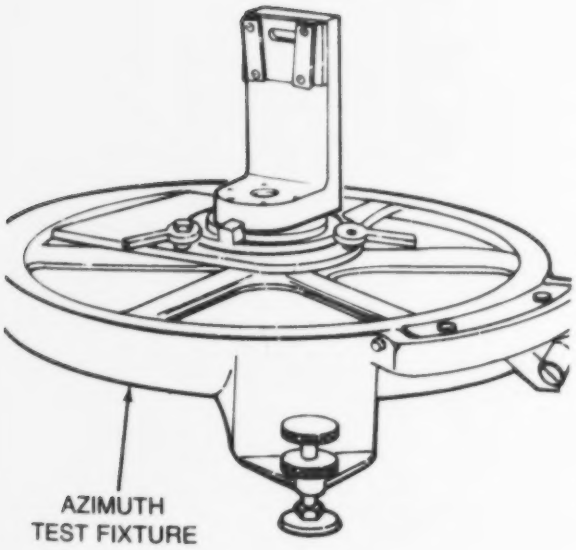


LOCATION	ITEM	ACTION

h. With the fixture set at zero, loosen the cam lock screws and rotate the fixture adapter to aline the dioptometer reticle with the projector collimator reticle and lock the cam lock screws.

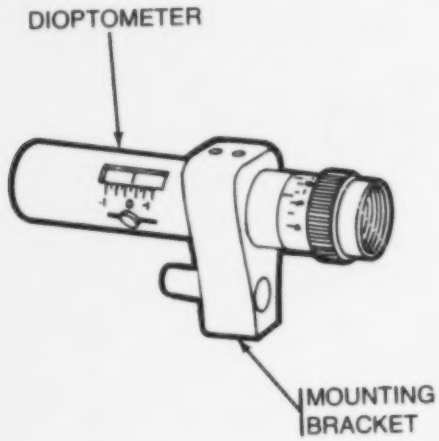


i. Remove the dioptometer and the alinement gage from the azimuth test fixture.

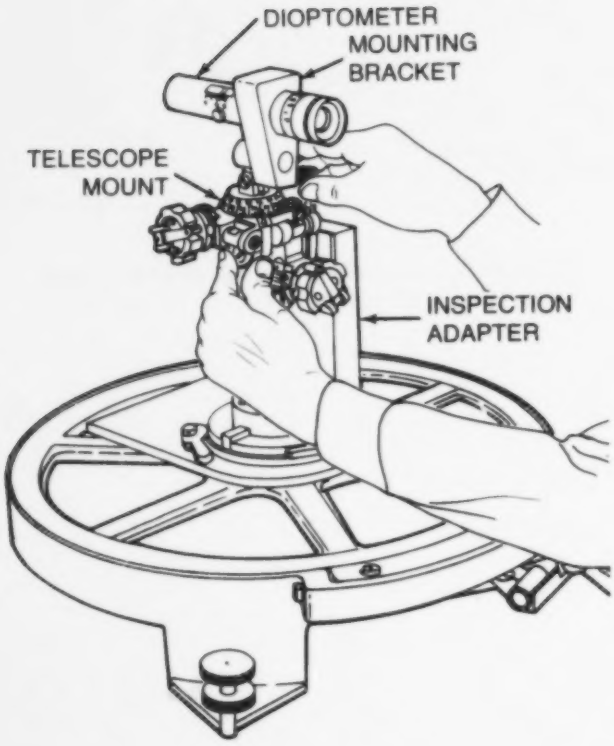


2-13. TELESCOPE MOUNT AZIMUTH TEST (CONT).

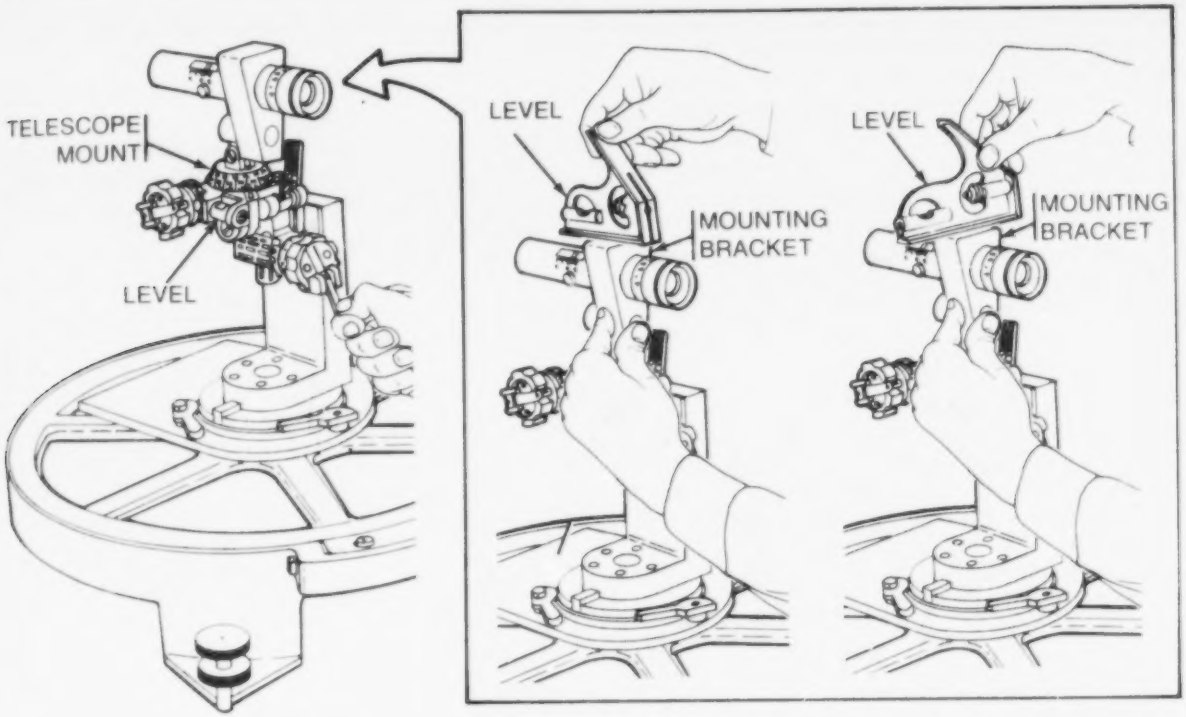
LOCATION	ITEM	ACTION
ORIENTATION		
Telescope Mount		a. Install dioptometer in mounting bracket.



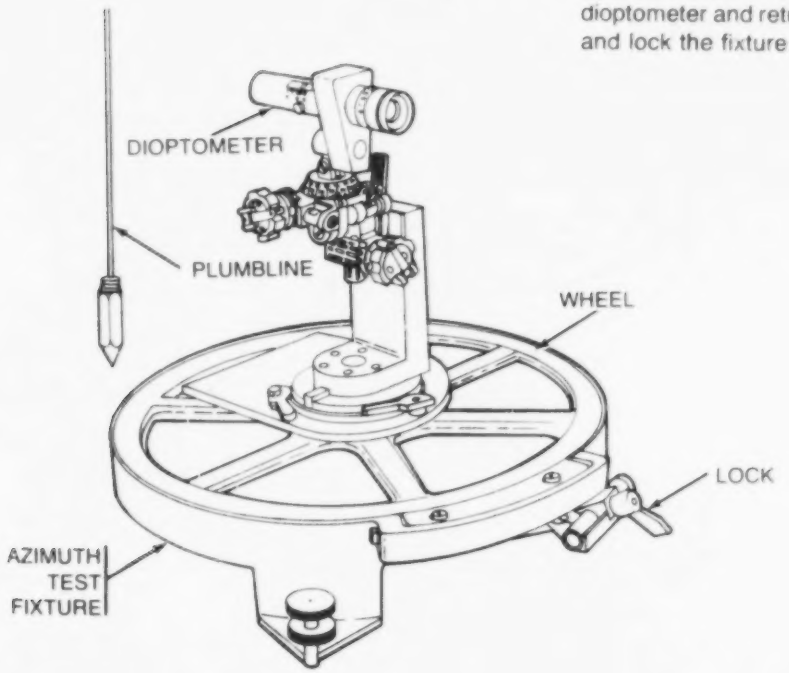
b. Mount and secure the telescope mount with the dioptometer and mounting bracket installed on the inspection adapter. Level the telescope mount and the mounting bracket.



LOCATION	ITEM	ACTION

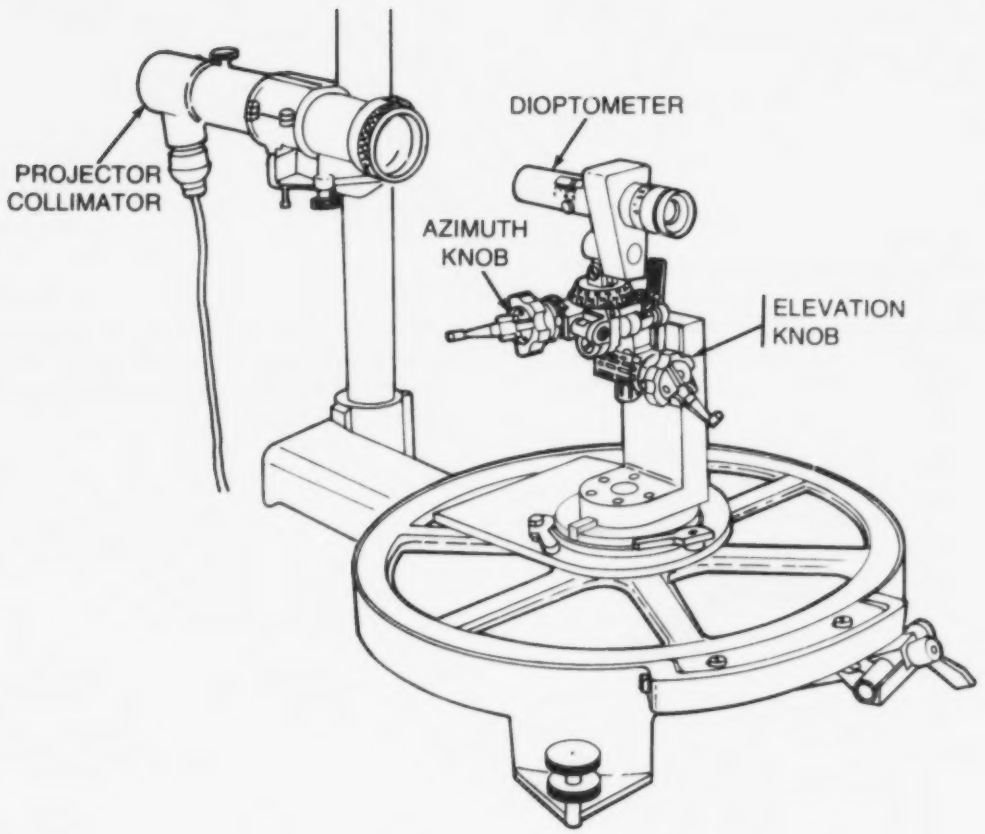


c. Loosen the wheel of the azimuth test fixture and aline the dioptometer on a plumb line. Plumb the dioptometer and return the wheel assembly to zero and lock the fixture.

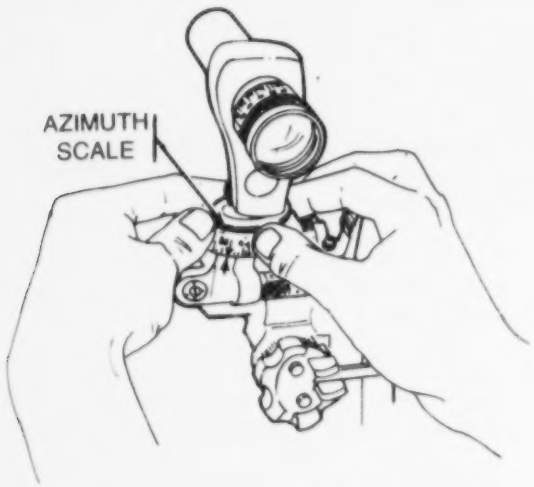


2-13. TELESCOPE MOUNT AZIMUTH TEST (CONT).

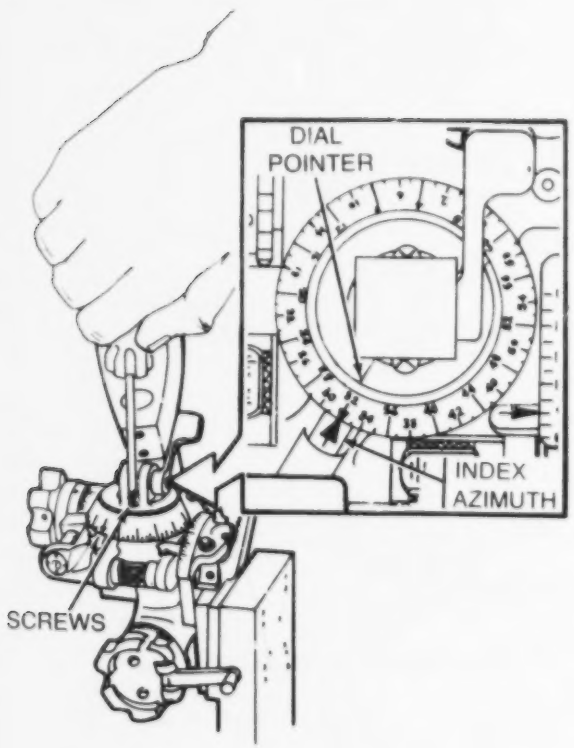
LOCATION	ITEM	ACTION
ORIENTATION (CONT)		d. Superimpose the vertical and horizontal reticle lines of the dioptometer with the projector collimator reticle by using the mount telescope elevation and azimuth knobs.

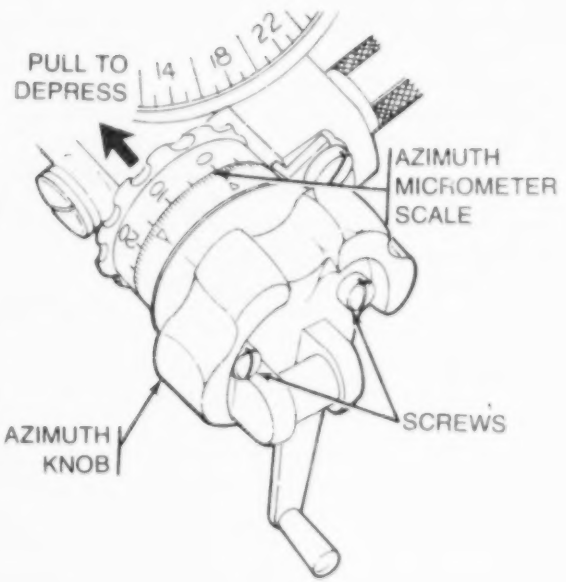


LOCATION	ITEM	ACTION



e. Depress the (azimuth) scale and adjust to 3200 mils. Loosen the clamping mechanism to gain access to the two screws which are just below the clamping mechanism. Loosen two screws and aline the dial pointer with the azimuth index on the mount. Tighten the screws. Realine the telescope mount and tighten clamping mechanism. Depress and set the (azimuth) micrometer scale to 0 mils. Loosen two screws on the azimuth knob assembly. While depressing the azimuth micrometer scale, set the red index scale to the pointer on the red dial pointer. Tighten the screws.





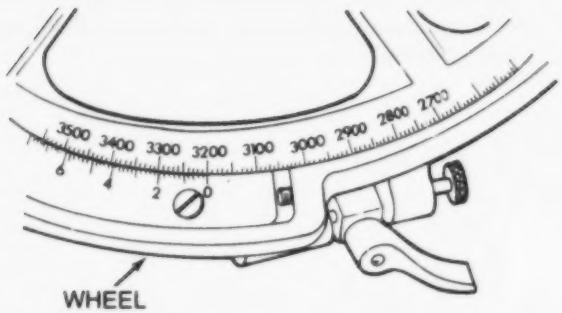
2-13. TELESCOPE MOUNT AZIMUTH TEST (CONT).

LOCATION	ITEM	ACTION

ORIENTATION (CONT)

NOTE

Correct any elevation error in the following steps, as evidenced by the lack of coincidence of the horizontal reticle lines of the dioptometer and the projector collimator, by adjusting half the error with the elevation knob and half the error with the projector collimator leveling screws.

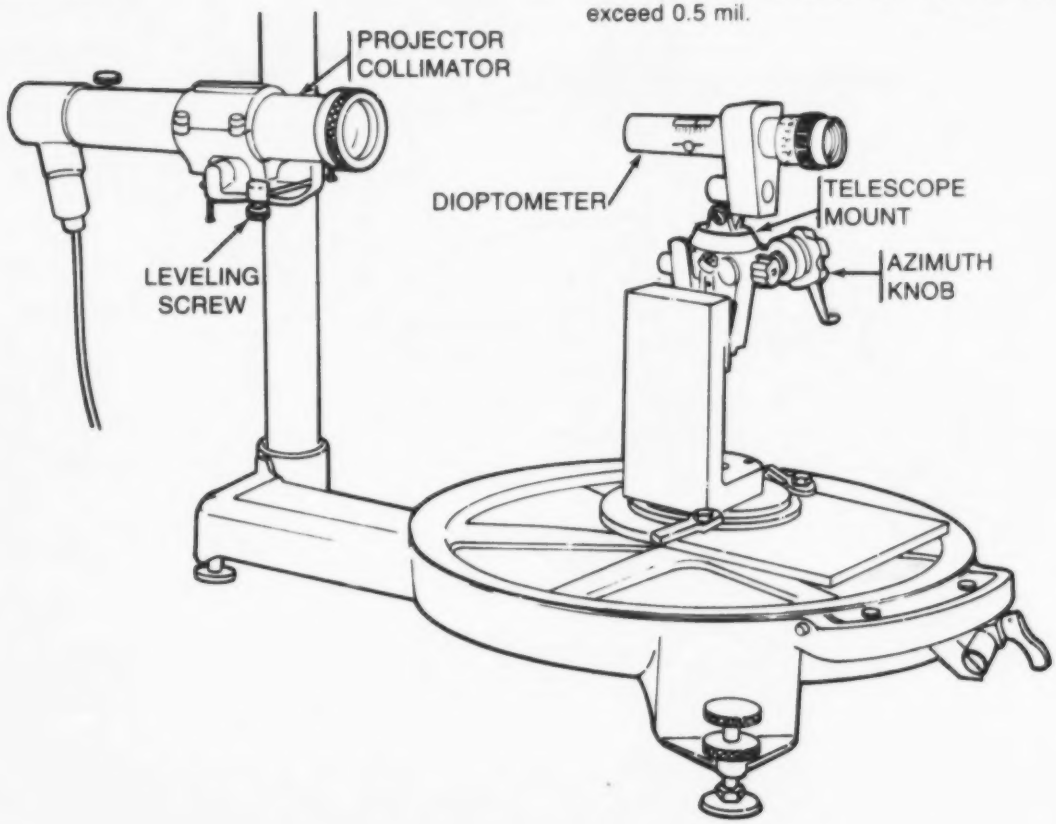


f. Verify that the optical axis of the dioptometer is horizontal. First, rotate the wheel assembly of the fixture to 3200 mils.

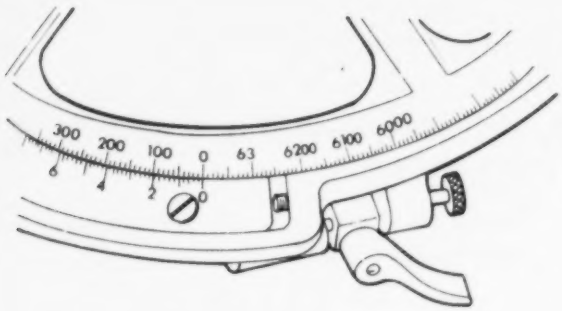
g. Counterrotate the mount (by azimuth knob) to return the dioptometer vertical reticle line to coincide with the projector collimator vertical target line.

h. Repeat steps f and g until horizontal lines remain in coincidence.

i. Repeat the procedure at 0, 1600, and 4800 mils until the dioptometer is horizontal. The error should not exceed 0.5 mil.



LOCATION	ITEM	ACTION



j. Return the fixture to zero mils azimuth setting and the dioptometer reticle coincident to the projector collimator vertical and horizontal lines.

TEST

NOTE

The following tests may be performed at the same time. Read each test and become familiar with the procedures. Record readings at each setting to use as a reference when the sum or difference of tests is required.

1 Test Mount — Horizontal travel

a. With backlash removed from direction of travel, rotate the line of sight of the mount through 6400 mils in precise 800 mil increments.

b. At each 800 mil increment on the mount, counter-rotate the wheel of the fixture 800 mils to establish coincidence of the dioptometer vertical line and projector collimator vertical reticle line.

c. Any vertical displacement of the line of sight through the intersecting point of the dioptometer reticle lines, with reference to the horizontal reticle line, shall not exceed 1 mil as measured on the projector collimator (2 mils total spread).

NOTE

Care shall be exercised to assure that backlash is excluded in horizontal travel measurement. The setting of the 800 mil position of the mount and test fixture shall be made without overtravel.

2 — Vertical displacement (lift)

a. While performing steps 1a and 1b at each of the 800 mil increments, reverse the azimuth motion of the mount by means of the azimuth knob.

b. The line of sight, through the intersection of the dioptometer reticle line, shall not displace vertically in excess of 0.5 mils as measured on the projector collimator.

2-13. TELESCOPE MOUNT AZIMUTH TEST (CONT).

LOCATION	ITEM	ACTION
TEST (CONT)		
3	Azimuth	a. While performing steps 1a and 1b, insure that there is no overtravel. b. Record accuracy error for all sight positions. The error should not exceed 1.0 mils.
		NOTE Any difference between the mil value recorded on the mount and the scale on the fixture is the azimuth accuracy error.
4	Azimuth backlash	a. Using the azimuth knobs on the mount, rotate the mount to a setting of approximately 3250 mils. With backlash included, reverse direction of the knob and again obtain coincidence of dioptometer vertical reticle line and projector collimator verticle reticle line without override. b. Record the azimuth mil values as read on the azimuth knob. c. Repeat steps a and b for 4050, 4850, 5650, 050 850, 1650 and 2450 mils. d. Any azimuth change from the original setting as read on the azimuth knob scale is the amount of backlash. e. At the selected azimuth position the amount of backlash added to the azimuth accuracy error for that position shall not exceed 2.0 mils.

2-14. TELESCOPE MOUNT OPERABILITY TEST.

This task covers:
Test

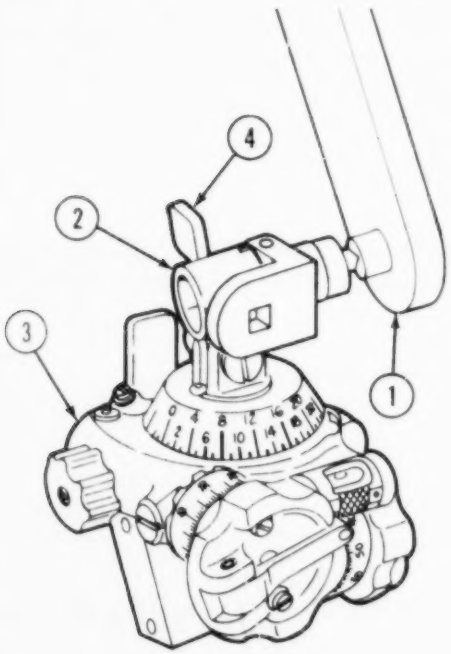
INITIAL SETUP

Equipment Required
Torque wrench 0-25 inch-pound range
Torque mandrel .624-.001 inches x 1.000 / .250 inches lg.
Torque adapters
1/2 in. socket with 1/4 in. drive

LOCATION	ITEM	ACTION

TEST

1 Telescope Mount — Clamping mechanism

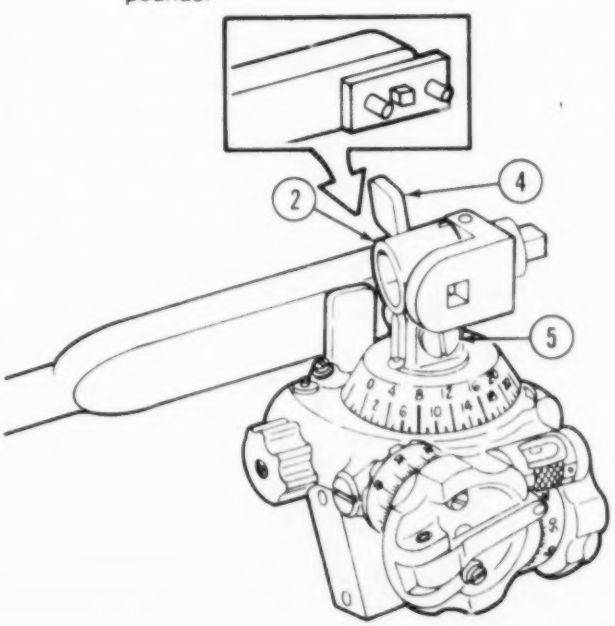


a. Insert mandrel with torque wrench (1) in clamp (2) of telescope mount (3).

b. With locking lever (4) unlocked, mandrel with torque wrench (1) should turn freely in clamp (2).

c. Clamp (2) should pivot on bolt (5).

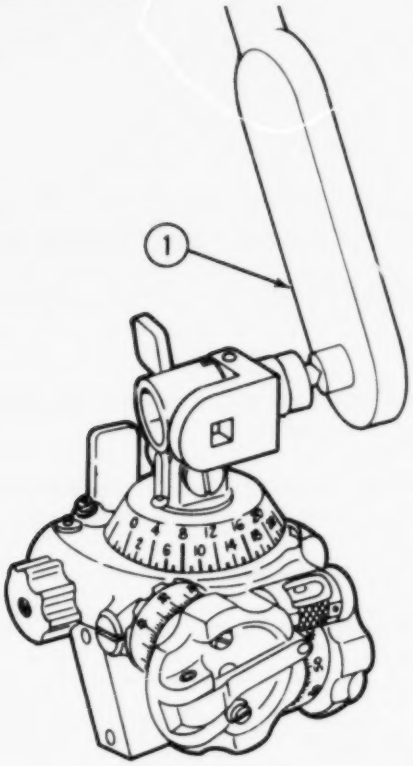
d. Lock locking lever (4) and torque to ten inch-pounds.



2-14. TELESCOPE MOUNT OPERABILITY TEST (CONT).

LOCATION	ITEM	ACTION

TEST (CONT)

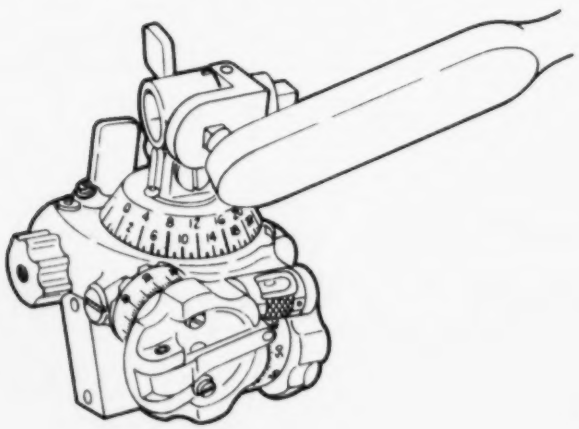


e. Apply thirty-five inch-pounds of torque to mandrel with torque wrench (1). The mandrel should not turn.

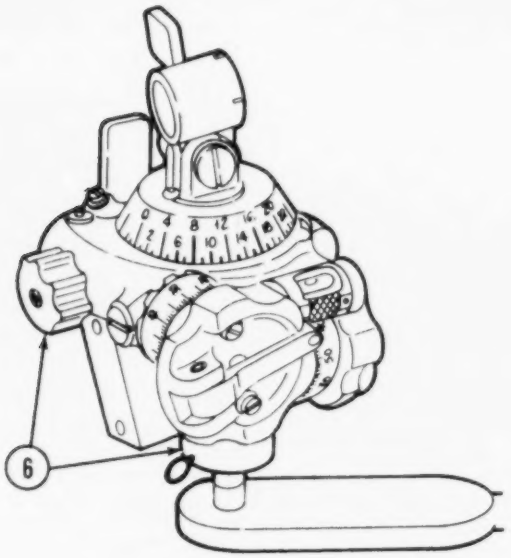
f. The clamping mechanism shall not rotate about its axis when a twelve inch-pound torque is applied.

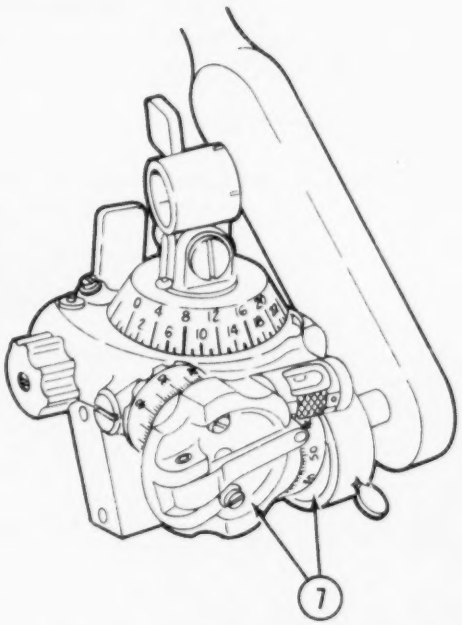
NOTE

If torque requirements are not met, refer to paragraph 2-9 for proper assembly procedures.



LOCATION	ITEM	ACTION
2	a. Locking knob	Rotate azimuth and elevation locking knobs (6) to a locked position and torque to ten inch-pounds with torque wrench and adapter.





	b. Azimuth and elevation knobs	Apply eight inch-pounds of torque to the elevation and azimuth knobs (7) with torque wrench and adapter. They should not move. Rotate the lock knobs (6) to the unlock position. Using the torque wrench and adapter, determine the torque required to turn the azimuth and elevation knobs. They should require from .5 to 4 inch-pounds to operate.

NOTE

If torque requirements are not met, refer to paragraph 2-9 for proper assembly procedures.

	c. Telescope Mount	Take into dark room and check that illumination is present and even.

WARNING

If not illuminated, follow radioactive safety precautions on inside front cover.

APPENDIX A
REFERENCES

A-1. **TECHNICAL MANUALS.**

TM 38-750	The Army Maintenance Management System (TAMMS)
TM 43-0139	Painting Instructions for Field Use
TM 740-90-1	Administrative Storage of Equipment
TM 9-254	General Maintenance Procedures for Fire Control Materiel

A-2. **FIELD MANUALS.**

FM 21-11	First Aid for Soldiers
FM 5-25	Explosives and Demolitions

APPENDIX B

REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

B-1. **SCOPE.** This manual lists spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of organizational, direct support, and general support maintenance of the Telescope Mount. It authorizes the requisitioning and issue of spares and repair parts as indicated by the source and maintenance codes.

B-2. **GENERAL.** This Repair Parts and Special Tools List is divided into the following sections:

a. *Section II.* Repair Parts List. A list of spares and repair parts authorized for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in numeric sequence, with the parts in each group listed in figure and item number sequence. Bulk materials are listed in NSN sequence.

b. *Section III.* Special Tools List. A list of special tools, special TMDE, and other special support equipment authorized for the performance of maintenance.

c. *Section IV.* National Stock Number and Part Number Index. A list, in National item identification number (NIIN) sequence, of all National stock numbers (NSN) appearing in the listings, followed by a list in alphameric sequence of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance. This index is followed by a cross-reference list of reference designators to figure and item numbers.

B-3. **EXPLANATION OF COLUMNS.**

a. *Illustration.* This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration on which the item is shown.

(2) *Item number.* The number used to identify item called out in the illustration.

b. *Source, Maintenance, and Recoverability (SMR) Codes.*

(1) *Source code.* Source codes indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

Code	*Definition*
PA	Item procured and stocked for anticipated or known usage.
PB	Item procured and stocked for insurance purpose because essentiality dictates that a minimum quantity be available in the supply system.
PC	Item procured and stocked and which otherwise would be coded PA except that it is deteriorative in nature.
PD	Support item, excluding support equipment, procured for initial issue or outfitting and stocked only for subsequent or additional initial issues or outfittings. Not subject to automatic replenishment.
PE	Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activities.
PF	Support equipment which will not be stocked but which will be centrally procured on demand.

Code	*Definition*
PG	Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item peculiar to the equipment which, because of probable discontinuance or shutdown of production facilities, would prove uneconomical to reproduce at a later time.
KD	An item of a depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provides items required at the time of overhaul or repair.
KF	An item of a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.
KB	Item included in both a depot overhaul/repair kit and a maintenance kit.
MO	Item to be manufactured or fabricated at organizational level.
MF	Item to be manufactured or fabricated at the direct support maintenance level.
MH	Item to be manufactured or fabricated at the general support maintenance level.
MD	Item to be manufactured or fabricated at the depot maintenance level.
AO	Item to be assembled at organizational level.
AF	Item to be assembled at direct support maintenance level.
AH	Item to be assembled at general support maintenance level.
AD	Item to be assembled at depot maintenance level.
XA	Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.
XB	Item is not procured or stocked. If not available through salvage, requisition.
XC	Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
XD	A support item that is not stocked. When required, item will be procured through normal supply channels.

NOTE

Cannibalization or salvage may be used as a source of supply for any items coded above except those coded XA and aircraft support items as restricted by AR 700-42.

(2) *Maintenance code.* Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(a) The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the third position will indicate one of the following levels of maintenance:

Code	*Application/Explanation*
C	Crew or operator maintenance performed within organizational maintenance.
O	Support item is removed, replaced, used at the organizational level.
F	Support item is removed, replaced, used at the direct support level.
H	Support item is removed, replaced, used at the general support level.
D	Support items that are removed, replaced, used at depot, mobile depot, or specialized repair activity only.

(b) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes.

Code	*Application/Explanation*
O	The lowest maintenance level capable of complete repair of the support item is the organizational level.
F	The lowest maintenance level capable of complete repair of the support item is the direct support level.

Code	*Application/Explanation*
H	The lowest maintenance level capable of complete repair of the support item is the general support level.
D	The lowest maintenance level capable of complete repair of the support item is the depot level.
L	Repair restricted to Specialized Repair Activity.
Z	Nonreparable. No repair is authorized.
B	No repair is authorized. The item may be reconditioned by adjusting, lubricating, etc., at the user level. No parts or special tools are procured for the maintenance of this item.

(3) *Recoverability code.* Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SMR Code format as follows:

Recoverability Codes	*Definition*
Z	Nonreparable item. When unserviceable, condemn and dispose at the level indicated in position 3.
O	Reparable item. When uneconomically reparable, condemn and dispose at organizational level.
F	Reparable item. When uneconomically reparable, condemn and dispose at the direct support level.
H	Reparable item. When uneconomically reparable, condemn and dispose at the general support level.
D	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
L	Reparable item. Repair, condemnation, and disposal not authorized below depot/specialized repair activity level.
A	Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

c. *National Stock Number.* Indicates the National stock number assigned to the item and which will be used for requisitioning.

d. *Part Number.* Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When a stock numbered item is requisitioned, the item received may have a different part number than the part being replaced.

e. *Federal Supply Code for Manufacturer (FSCM).* The FSCM is a 5-digit numeric code listed in SB 708-42 which is used to identify the manufacturer, distributor, or Government agency, etc.

f. *Description.* Indicates the Federal item name and, if required, a minimum description to identify the item.

g. *Unit of Measure (U/M).* Indicates the standard of the basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr, etc). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

h. *Quantity Incorporated in Unit.* Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A 'V' appearing in this column in lieu of a quantity indicates that no specific quantity is applicable, (e.g., shims, spacers, etc).

B-4. SPECIAL INFORMATION. Not applicable.

B-5. HOW TO LOCATE REPAIR PARTS.

a. When National Stock Number or Part Number is Unknown:

(1) *First.* Using the table of contents, determine the functional group within which the item belongs. This is necessary since the illustrations are prepared for functional groups, and listings are divided into the same groups.

(2) *Second.* Find the illustration covering the functional group to which the item belongs.

(3) *Third.* Identify the item on the illustration and note the illustration figure and item number of the item.

(4) *Fourth.* Using the Repair Parts Listing, find the figure and item number noted on the illustration.

b. When National Stock Number or Part Number is Known:

(1) *First.* Using the Index of National Stock Numbers and Part Numbers, find the pertinent National stock number or part number. This index is in NIIN sequence followed by a list of part numbers in alphameric sequence, cross-referenced to the illustration figure number and item number.

(2) *Second.* After finding the figure and item number, locate the figure and item number in the repair parts list.

B-6. ABBREVIATIONS. Not applicable.

Section II. REPAIR PARTS LIST

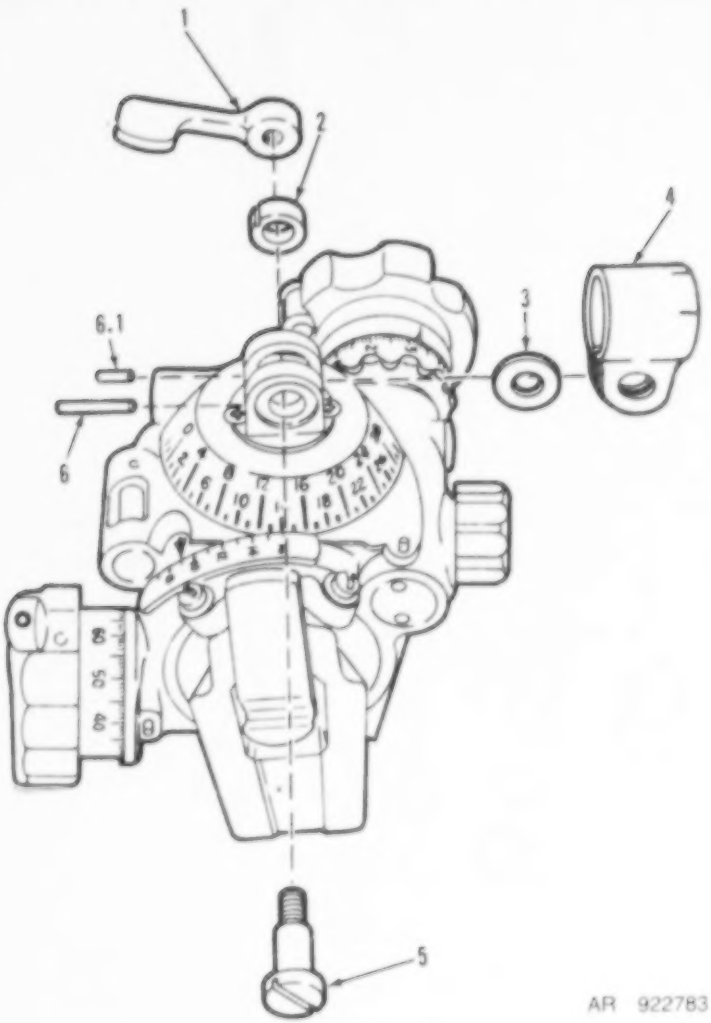


Figure B-1. Telescope mount (1 of 6)

FIG NO	ITEM NO	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	UM	QTY INC IN UNIT
						GROUP 0502 TELESCOPE MOUNT 11741796		
B-1	1	PAHZZ	1240-01-052-6310	11741764	19200	LEVER, LOCK-RELEASE *	EA	1
B-1	2	PAHZZ	3120-01-052-6288	11741753	19200	BUSHING, SLEEVE *	EA	1
B-1	3	PAHZZ	5310-01-052-3570	11741760	19200	WASHER, FLAT *	EA	1
B-1	4	PAHZZ	5340-01-052-3612	11741762	19200	CLAMP, LOOP *	EA	1
B-1	5	PAHZZ	5306-01-052-3564	11741752	19200	BOLT, SHOULDER *	EA	1
B-1	6	PAHZZ	5315-00-664-7294	MS16562-196	96906	PIN, SPRING *	EA	1
B-1	6.1	PADZZ	5315-00-817-0889	MS16555-601	96906	PIN, STRAIGHT *	EA	1

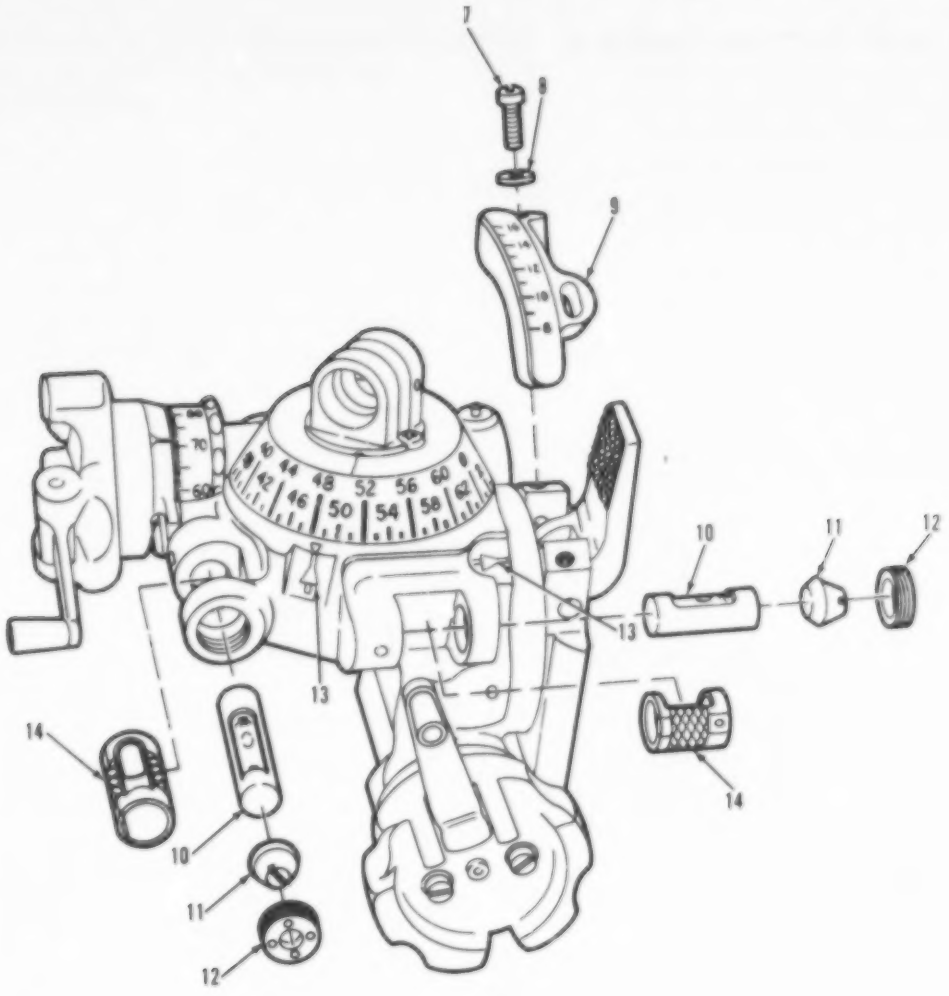


Figure B-1. Telescope mount (2 of 6)

FIG NO	ITEM NO	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	UM	QTY INC IN UNIT
						GROUP 0502 TELESCOPE MOUNT 11741796		
B-1	7	PAHZZ	5305-00-940-9491	MS35275-230	96906	SCREW, MACHINE *	EA	2
B-1	8	PAHZZ	5310-00-722-5998	MS15795-805	96906	WASHER, FLAT *	EA	2
B-1	9	PCHDL	1240-01-053-3354	11733751	19200	SCALE, INDICATING *	EA	1
B-1	10	PCHDA	1240-01-057-0112	11748090	19200	LEVEL, FIRE CONTROL LEVEL POTTED ASSEMBLY *	EA	2
B-1	11	PAHZZ	1290-00-896-2251	8202177	19200	ECCENTRIC *	EA	2
B-1	12	PAHZZ	1240-01-070-8573	11739567	19200	RING, RETAINING, OPTI *	EA	2
B-1	13	PCDDL	6260-01-053-3356	11748093	19200	INDEX NUCLEAR *	EA	2
B-1	14	PAHZZ	1240-01-055-9696	11739566	19200	COVER, LAMP *	EA	2

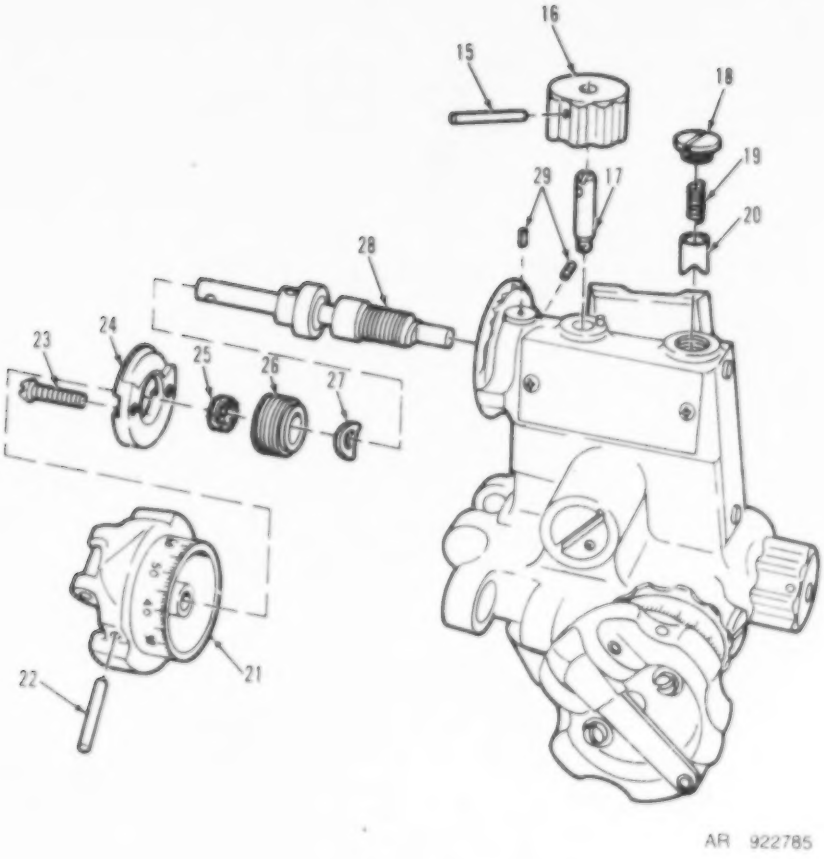


Figure B-1. Telescope mount (3 of 6)

FIG NO	ITEM NO	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	UM	QTY INC IN UNIT
						GROUP 0502 TELESCOPE MOUNT 11741796		
B-1	15	PAHZZ	5315-00-664-7294	MS16562-196	96906	PIN, SPRING	EA	1
B-1	16	PAHZZ	5355-01-057-0114	11741765	19200	KNOB	EA	1
B-1	17	PAHZZ	1240-01-057-2833	11741747	19200	SHAFT, SHOULDERED	EA	1
B-1	18	PAHZZ	1240-01-057-4379	11741756	19200	CAP, GREASE	EA	1
B-1	19	PAHZZ	5360-01-055-8896	MS24585-2069	96906	SPRING	EA	1
B-1	20	PAHZZ	1240-01-055-9695	11741757	19200	PLUNGER, DETENT	EA	1
B-1	21	AHHHH		11741772	19200	KNOB	EA	1
B-1	22	PAHZZ	5315-00-753-3892	MS16562-216	96906	PIN, SPRING	EA	1
B-1	23	PAHZZ	5305-00-054-5648	MS51957-14	96906	SCREW, MACHINE	EA	2
B-1	24	PCHDL	1240-01-051-8472	11733745	19200	LAMP UNIT, RADIOLUMIOUS	EA	1
B-1	25	PAHZZ	1240-01-055-0841	11741731-1	19200	FELT, MECHANICAL PREFORMED	EA	1
B-1	26	PAHZZ	1240-01-055-0855	11741754	19200	RETAINER, HELICAL COMPRESSION SPRING	EA	1
B-1	27	PAHZZ	5310-01-056-7261	11741794	19200	WASHER, SPRING TENSI	EA	1
B-1	28	PAHZZ	1240-01-057-6545	11741741	19200	WORM SHAFT	EA	1
B-1	29	PAHZZ	5305-00-800-7261	MS51021-9	96906	SETSCREW	EA	2

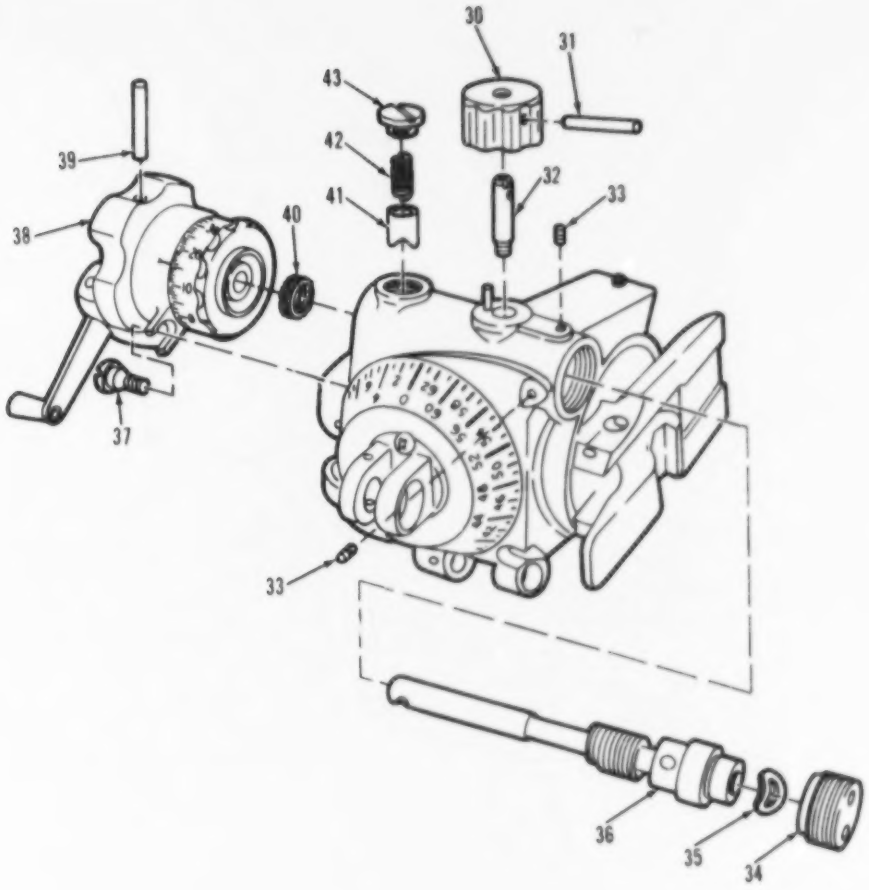


Figure B-1. Telescope mount (4 of 6)

FIG NO	ITEM NO	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	UM	QTY INC IN UNIT
						GROUP 0502 TELESCOPE MOUNT 11741796		
B-1	30	PAHZZ	5355-01-057-0114	11741766	19200	KNOB *	EA	1
B-1	31	PAHZZ	5315-00-664-7294	MS16562-196	96906	PIN, SPRING *	EA	1
B-1	32	PAHZZ	1240-01-057-2833	11741747	19200	SHAFT, SHOULDERED *	EA	1
B-1	33	PAHZZ	5305-00-800-7261	MS51021-9	96906	SETSCREW *	EA	2
B-1	34	PAHZZ	1240-01-055-0854	11741755	19200	RETAINER, HELICAL COMPRESSION SPRING *	EA	1
B-1	35	PAHZZ	5310-01-056-7261	11741794	19200	WASHER, SPRING TENSION *	EA	1
B-1	36	PAHZZ	1240-01-057-6546	11741740	19200	WORM, SHAFT *	EA	1
B-1	37	PAHZZ	5305-01-076-1400	11741735	19200	SCREW, SHOULDER *	EA	1
B-1	38	AHHDD		11741790	19200	DIAL, CONTROL *	EA	1
B-1	39	PAHZZ	5315-00-753-3892	MS16562-216	96906	PIN, SPRING *	EA	1
B-1	40	PAHZZ	5330-01-064-1587	11741731-2	19200	FELT, MECHANICAL PREFORMED*	EA	1
B-1	41	PAHZZ	1240-01-055-9695	11741757	19200	PLUNGER, DETENT *	EA	1
B-1	42	PAHZZ	5360-01-055-8896	MS24585-2069	96906	SPRING *	EA	1
B-1	43	PAHZZ	1240-01-057-4379	11741756	19200	CAP, GREASE *	EA	1

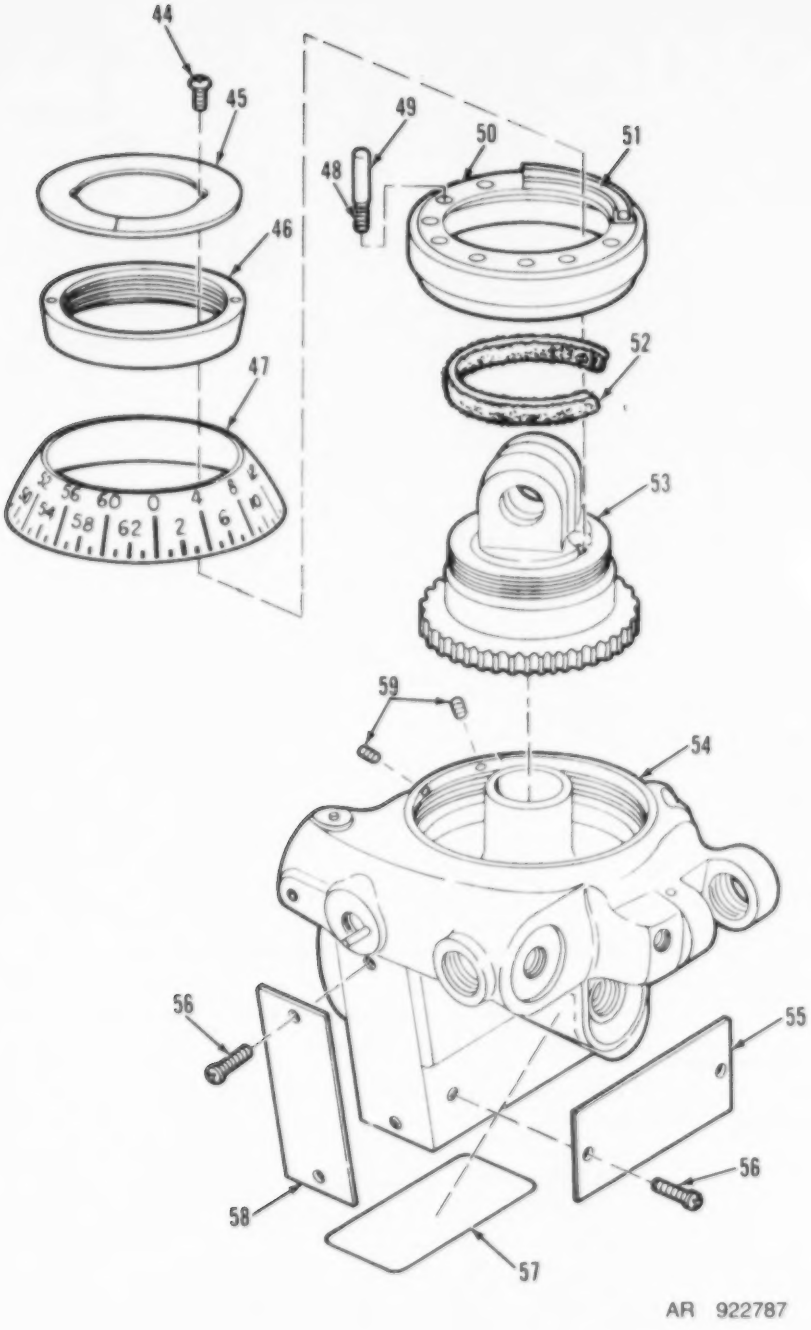


Figure B-1. Telescope mount (5 of 6)

FIG NO	ITEM NO	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	UM	QTY INC IN UNIT
						GROUP 0502 TELESCOPE MOUNT 11741796		
B-1	44	PAHZZ	5305-00-054-5646	MS51957-12	96906	SCREW, MACHINE *	EA	2
B-1	45	PAHZZ	5355-01-057-0467	11741733	19200	POINTER, DIAL *	EA	1
B-1	46	PAHZZ	1240-01-055-6109	11741749	19200	NUT, CONICAL *	EA	1
B-1	47	PAHZZ	5355-01-055-8670	11733740	19200	DIAL, CONTROL *	EA	1
B-1	48	PAHZZ	5360-01-057-3507	11741728	19200	SPRING, HELICAL, COMP *	EA	5
B-1	49	PAHZZ	1240-01-055-8698	11741729	19200	PLUNGER, SCALE *	EA	5
B-1	50	PADZZ	5365-01-071-0565	11741765	19200	RING, RETAINING, INSTRUMENT *	EA	1
B-1	51	PCDLL	6260-01-056-2883	11733741	19200	LAMP, NUCLEAR RADIOLUMINOUS *	EA	1
B-1	52	PADZZ	1240-01-077-3932	11741758-2	19200	FELT, MECHANICAL PREFORMED*	EA	1
B-1	53	PADDD	3020-01-057-0154	11741774	19200	GEAR, WORM WHEEL *	EA	1
B-1	54	XADZZ		11741775	19200	HOUSING MACHINED *	EA	1
B-1	55	PADZZ	9905-01-055-9693	11741750	19200	PLATE, IDENTIFICATION *	EA	1
B-1	56	PADZZ	5305-00-054-5635	MS51957-1	96906	SCREW, MACHINE *	EA	4
B-1	57	PADZZ	9905-00-257-2746	11731011	19200	PLATE, INSTRUCTIONS *	EA	1
B-1	58	PADZZ	9905-01-070-3399	11741759	19200	PLATE, IDENTIFICATION *	EA	1
B-1	59	PAHZZ	5305-01-055-3770	MS51038-102	96906	SETSCREW *	EA	2

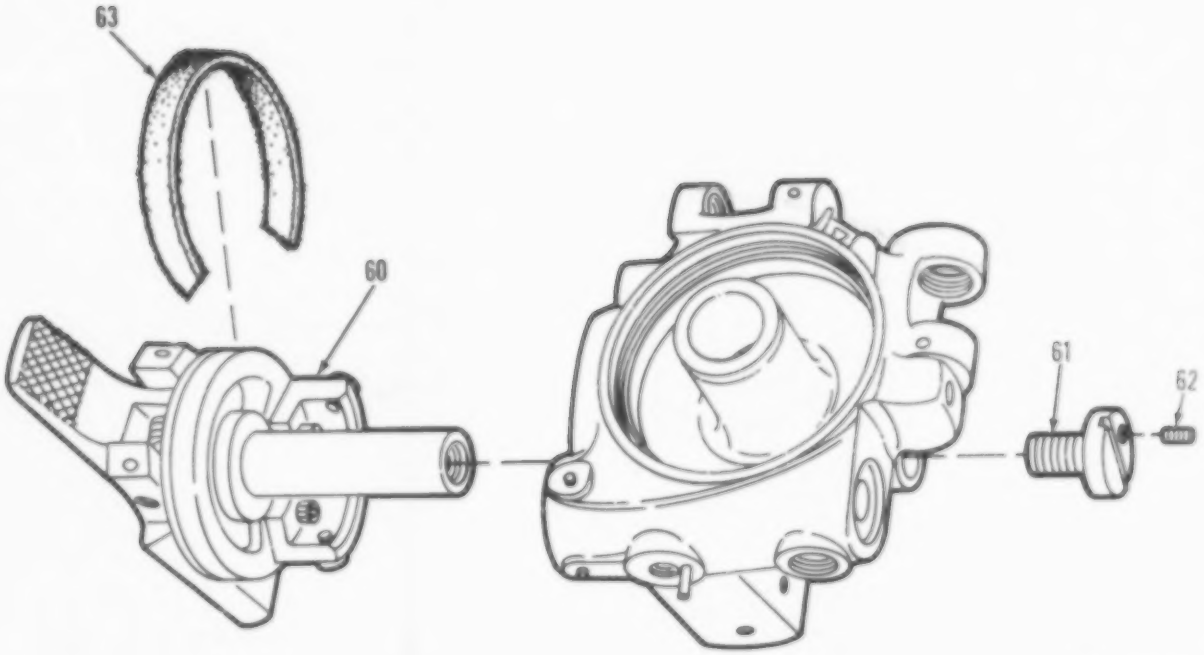


Figure B-1. Telescope mount (6 of 6)

FIG NO	ITEM NO	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	UM	QTY INC IN UNIT
						GROUP 0502 TELESCOPE MOUNT 11741796		
B-1	60	PADZZ	3020-01-057-0090	11741792	19200	GEAR SECTOR, WORM WHEEL *	EA	1
B-1	61	PAHZZ	5305-01-075-1902	11741751	19200	SCREW, RETAINING *	EA	1
B-1	62	PAHZZ	5305-00-543-5832	MS51021-11	96906	SETSCREW *	EA	1
B-1	63	PAHZZ	1240-01-055-0842	11741758-1	19200	FELT, MECHANICAL PREFORMED*	EA	1

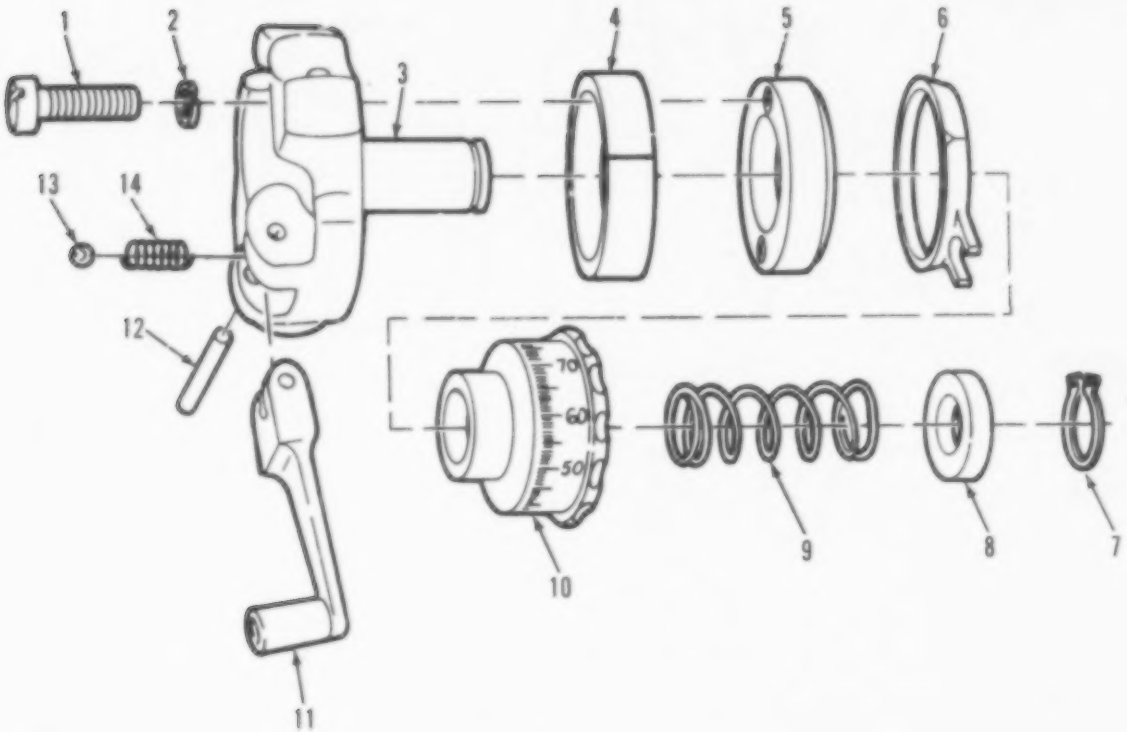


Figure B-2. Control dial

FIG NO	ITEM NO	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE		UM	QTY INC IN UNIT
						GROUP 050201 CONTROL DIAL 11741790			
B-2	1	PAHZZ	5305-00-925-4777	MS35275-231	96906	SCREW, MACHINE	*	EA	2
B-2	2	PAHZZ	5310-00-929-6395	MS35338-136	96906	WASHER, LOCK	*	EA	2
B-2	3	PAHZZ	5355-01-065-2559	11741779	19200	KNOB ASSEMBLY	*	EA	1
B-2	4	PAHZZ	5355-01-055-8671	11741763	19200	DIAL, CONTROL	*	EA	1
B-2	5	PAHZZ	1240-01-071-0587	11741734	19200	PLATE, RETAINING	*	EA	1
B-2	6	PAHZZ	5355-01-055-8672	11741768	19200	POINTER, DIAL	*	EA	1
B-2	7	PAHZZ	5365-00-818-0872	MS16624-4043	96906	RING, RETAINING	*	EA	1
B-2	8	PAHZZ	1240-01-055-8699	11741730	19200	COLLAR, SPRING	*	EA	1
B-2	9	PAHZZ	5360-01-055-8895	MS24585-1397	96906	SPRING, HELICAL, COMP	*	EA	1
B-2	10	PCHDL	5355-01-053-6448	11733748	19200	DIAL, CONTROL	*	EA	1
B-2	11	PAHZZ	1240-01-057-9204	11741739	19200	CRANK, HAND	*	EA	1
B-2	12	PAHZZ	5315-00-841-4442	MS16562-224	96906	PIN, SPRING	*	EA	1
B-2	13	PAHZZ	3110-00-183-9175	MS19060-18	96906	BALL, BEARING	*	EA	1
B-2	14	PAHZZ	5360-01-062-6720	11741727	19200	SPRING	*	EA	1

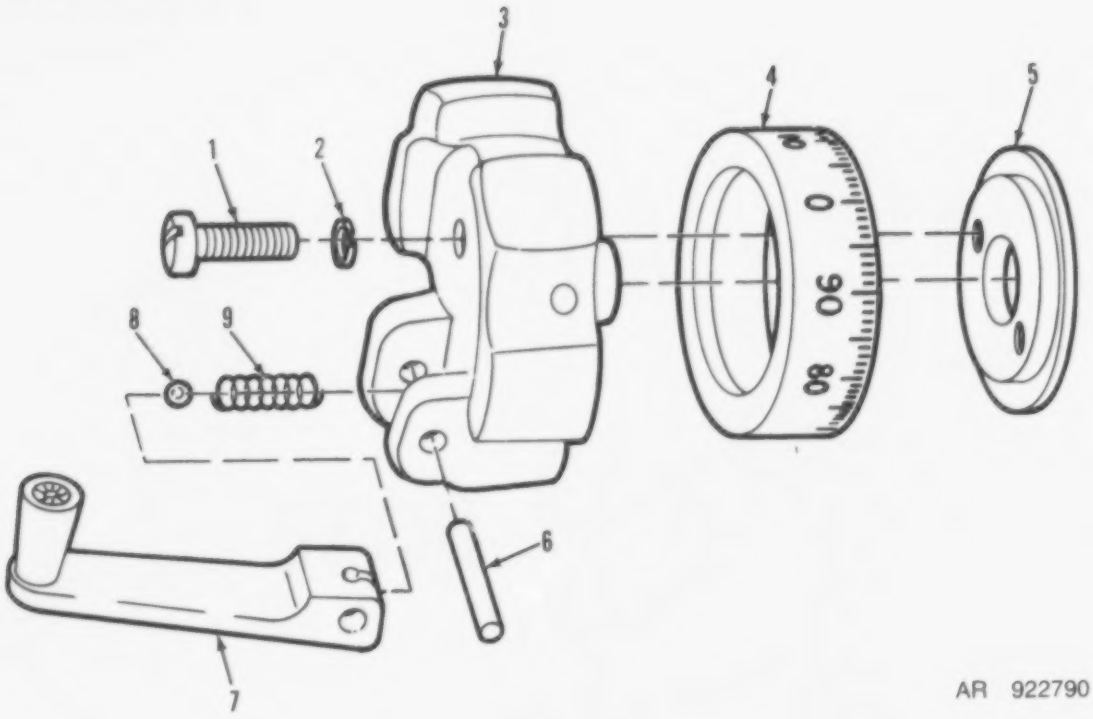


Figure B-3. Knob assembly

FIG NO	ITEM NO	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	UM	QTY INC IN UNIT
						GROUP 050202 KNOB ASSEMBLY		
B-3	1	PAHZZ	5305-00-924-8380	MS35275-229	96906	SCREW	EA	2
B-3	2	PAHZZ	5310-00-929-6395	MS35338-136	96906	WASHER, LOCK	EA	2
B-3	3	PAHZZ	5355-01-062-3414	11741778	19200	KNOB	EA	1
B-3	4	PAHZZ	5355-01-055-8669	11733742	19200	DIAL, CONTROL	EA	1
B-3	5	PAHZZ	1240-01-057-4378	11741732	19200	HUB, BODY	EA	1
B-3	6	PAHZZ	5315-00-841-4442	MS16562-224	96906	PIN, SPRING	EA	1
B-3	7	PAHZZ	1240-01-057-9204	11741739	19200	CRANK, HAND	EA	1
B-3	8	PAHZZ	3110-00-183-9175	MS19060-18	96906	BALL, BEARING	EA	1
B-3	9	PAHZZ	5360-01-062-6720	11741727	19200	SPRING	EA	1
						GROUP 9999 BULK MATERIALS		
BULK				QQ-A-250/7E		ALUMINUM 3 3/8 IN. x 1 3/4 IN. x 1 IN.		
BULK				ASTM-A581-78		CORROSION RESISTING STEEL, 11/16 IN. DIA x 2 1/16 IN.		
BULK				QQS763D		CORROSION RESISTING STEEL, 11/16 IN. DIA x 1 5/8 IN.		
BULK				QQS766C		CORROSION RESISTING STEEL, 1 1/2 IN. x 1 1/2 IN. x 5/16 IN.		
BULK				QQ-A-200/8D		ALUMINUM, 5 IN. x 7 IN. x 1/8 IN.		

Section III. SPECIAL TOOLS LIST

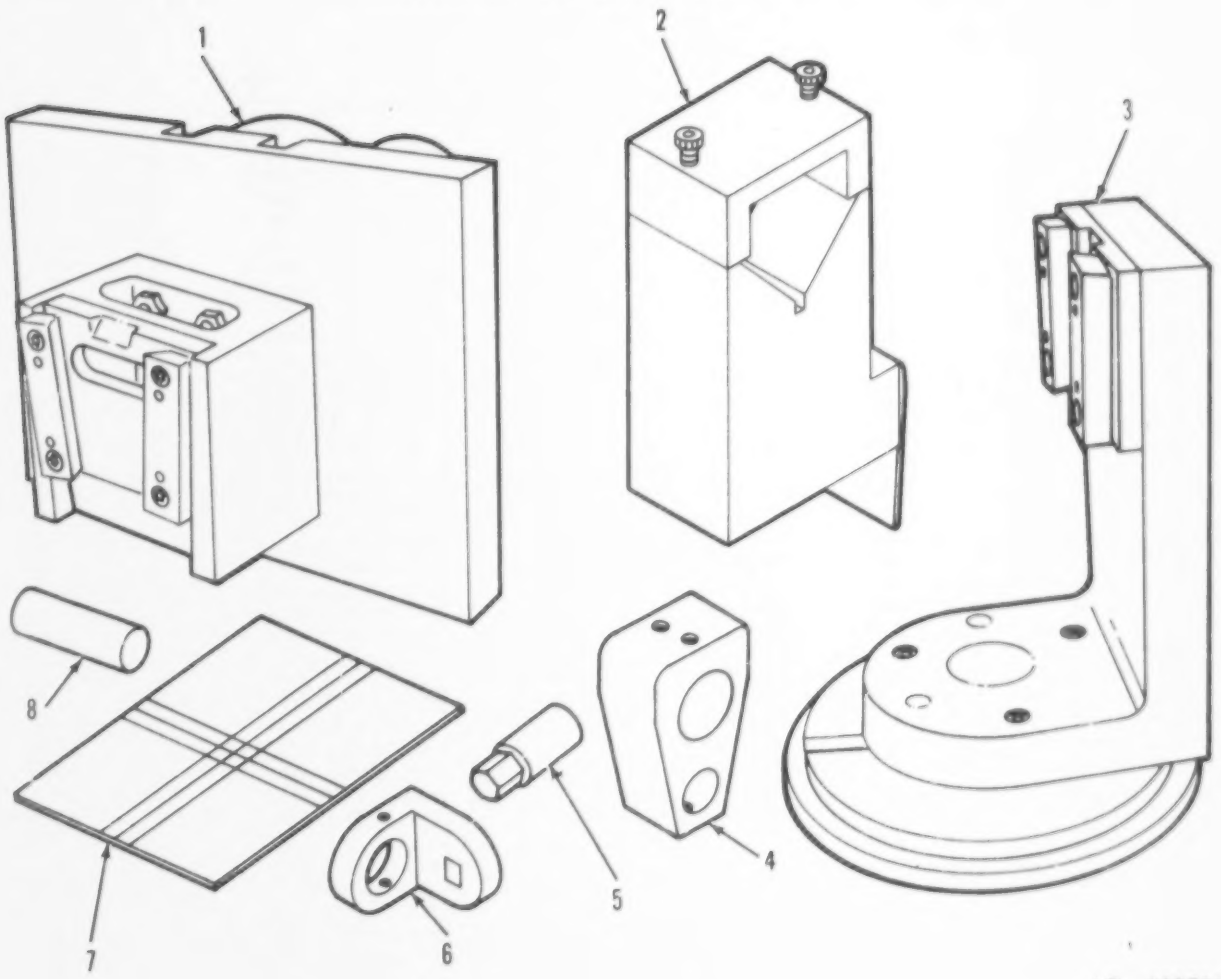


Figure B-4. Special tools

FIG NO	ITEM NO	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	UM	QTY INC IN UNIT
						GROUP 9500 SPECIAL TOOLS		
B-4	1	PEHZZ	4931-01-061-6366	11750708	19200	ADAPTER, FINAL INSPECTION ELEVATION	EA	1
B-4	2	PEHZZ	4931-01-061-6365	11750712	19200	GAGE, ALINEMENT FINAL INSPECTION AZIMUTH	EA	1
B-4	3	PEHZZ	4931-01-061-6367	11750709	19200	ADAPTER, FINAL INSPECTION AZIMUTH	EA	1
B-4	4	MHHZZ		11828732	19200	DIOPTOMETER MOUNTING BRACKET	EA	1
B-4	5	MHHZZ		11828733	19200	TORQUE ADAPTER (MANDREL)	EA	1
B-4	6	MHHZZ		11828734	19200	TORQUE ADAPTER (M64E2)	EA	1
B-4	7	MHHZZ		11828735	19200	TARGET	EA	1
B-4	8	MHHZZ		11828736	19200	MANDREL	EA	1

Section IV. NATIONAL STOCK NUMBER AND PART NUMBER INDEX

STOCK NUMBER	FIG NO.	ITEM NO.
5305-00-054-5635	B-1	56
5305-00-054-5646	B-1	44
5305-00-054-5648	B-1	23
5355-01-065-2559	B-2	3
3110-00-183-9175	B-2	13
3110-00-183-9175	B-3	8
9905-00-257-2746	B-1	57
5305-00-543-5832	B-1	62
5315-00-664-7294	B-1	6
5315-00-664-7294	B-1	15
5315-00-664-7294	B-1	31
5310-00-722-5998	B-1	8
5315-00-753-3892	B-1	22
5315-00-753-3892	B-1	39
5305-00-800-7261	B-1	29
5305-00-800-7261	B-1	33
5315-00-817-0889	B-1	6.1
5365-00-818-0872	B-2	7
5315-00-841-4442	B-2	12
5315-00-841-4442	B-3	6
1290-00-896-2251	B-1	11
5305-00-924-8380	B-3	1
5305-00-925-4777	B-2	1
5310-00-929-6395	B-2	2
5310-00-929-6395	B-3	2
5305-00-940-9491	B-1	7
1240-01-051-8472	B-1	24
5306-01-052-3564	B-1	5
5310-01-052-3570	B-1	3
5340-01-052-3612	B-1	4
3120-01-052-6288	B-1	2
1240-01-052-6310	B-1	1
1240-01-053-3354	B-1	9
6260-01-053-3356	B-1	13
5355-01-053-6448	B-2	10
1240-01-055-0841	B-1	25
1240-01-055-0842	B-1	63
1240-01-055-0854	B-1	34
1240-01-055-0855	B-1	26
5305-01-055-3770	B-1	59
1240-01-055-6109	B-1	46
5355-01-055-8669	B-3	4
5355-01-055-8670	B-1	47
5355-01-055-8671	B-2	4
5355-01-055-8672	B-2	6
1240-01-055-8698	B-1	49
1240-01-055-8699	B-2	8
5360-01-055-8895	B-2	9
5360-01-055-8896	B-1	19
5360-01-055-8896	B-1	42
9905-01-055-9693	B-1	55
1240-01-055-9695	B-1	20
1240-01-055-9695	B-1	41
1240-01-055-9696	B-1	14
6260-01-056-2883	B-1	51
5310-01-056-7261	B-1	27
5310-01-056-7261	B-1	35
3020-01-057-0090	B-1	60
1240-01-057-0112	B-1	10
5355-01-057-0114	B-1	16
5355-01-057-0114	B-1	30
3020-01-057-0154	B-1	53
5355-01-057-0467	B-1	45
1240-01-057-2833	B-1	17
1240-01-057-2833	B-1	32
5360-01-057-3507	B-1	48
1240-01-057-4378	B-3	5
1240-01-057-4379	B-1	18
1240-01-057-4379	B-1	43
1240-01-057-6545	B-1	28
1240-01-057-6546	B-1	36
1240-01-057-9204	B-2	11
1240-01-057-9204	B-3	7
4931-01-061-6365	B-4	2
4931-01-061-6366	B-4	1
4931-01-061-6367	B-4	3
5355-01-062-3414	B-3	3
5360-01-062-6720	B-2	14
5360-01-062-6720	B-3	9
5330-01-064-1587	B-1	40
9905-01-070-3399	B-1	58
1240-01-070-8573	B-1	12
5365-01-071-0565	B-1	50
1240-01-071-0587	B-2	5
5305-01-075-1902	B-1	61
5305-01-076-1400	B-1	37
1240-01-077-3932	B-1	52

PART NUMBER	FSCM	FIG. NO.	ITEM NO.
ASTM-A581-78		BULK	
MS15795-805	96906	B-1	8
MS16555-601	96906	B-1	6.1
MS16562-196	96906	B-1	6
MS16562-196	96906	B-1	15
MS16562-196	96906	B-1	31
MS16562-216	96906	B-1	22
MS16562-216	96906	B-1	39
MS16562-224	96906	B-2	12
MS16562-224	96906	B-3	6
MS16624-4043	96906	B-2	7
MS19060-18	96906	B-2	13
MS19060-18	96906	B-3	8
MS24585-1397	96906	B-2	9
MS24585-2069	96906	B-1	19
MS24585-2069	96906	B-1	42
MS35275-229	96906	B-3	1
MS35275-230	96906	B-1	7
MS35275-231	96906	B-2	1
MS35338-136	96906	B-2	2
MS35338-136	96906	B-3	2
MS51021-11	96906	B-1	62
MS51021-9	96906	B-1	29
MS51021-9	96906	B-1	33
MS51038-102	96906	B-1	59
MS51957-1	96906	B-1	56
MS51957-12	96906	B-1	44
MS51957-14	96906	B-1	23
QQ-A-200/8D		BULK	
QQ-A-250/7E		BULK	
QQS763D		BULK	
QQS766C		BULK	
8202177	19200	B-1	11
11731011	19200	B-1	57
11733740	19200	B-1	47
11733741	19200	B-1	51
11733742	19200	B-3	4
11733745	19200	B-1	24
11733748	19200	B-2	10
11733751	19200	B-1	9
11739566	19200	B-1	14
11739567	19200	B-1	12
11741727	19200	B-2	14
11741727	19200	B-3	9
11741728	19200	B-1	48
11741729	19200	B-1	49
11741730	19200	B-2	8
11741731-1	19200	B-1	25
11741731-2	19200	B-1	40
11741732	19200	B-3	5
11741733	19200	B-1	45
11741734	19200	B-2	5
11741735	19200	B-1	37
11741739	19200	B-2	11
11741739	19200	B-3	7
11741740	19200	B-1	36
11741741	19200	B-1	28
11741747	19200	B-1	17
11741747	19200	B-1	32
11741749	19200	B-1	46
11741750	19200	B-1	55
11741751	19200	B-1	61
11741752	19200	B-1	5
11741753	19200	B-1	2
11741754	19200	B-1	26
11741755	19200	B-1	34
11741756	19200	B-1	18
11741756	19200	B-1	43
11741757	19200	B-1	20
11741757	19200	B-1	41
11741758-1	19200	B-1	63
11741758-2	19200	B-1	52
11741759	19200	B-1	58
11741760	19200	B-1	3
11741762	19200	B-1	4
11741763	19200	B-2	4
11741764	19200	B-1	1
11741765	19200	B-1	50
11741766	19200	B-1	16
11741766	19200	B-1	30
11741768	19200	B-2	6
11741772	19200	B-1	21
11741774	19200	B-1	53
11741775	19200	B-1	54
11741778	19200	B-3	3
11741779	19200	B-2	3
11741790	19200	B-1	38
11741792	19200	B-1	60
11741794	19200	B-1	27
11741794	19200	B-1	35
11748090	19200	B-1	10
11748093	19200	B-1	13
11750708	19200	B-4	1
11750709	19200	B-4	3
11750712	19200	B-4	2
11828732	19200	B-4	4
11828733	19200	B-4	5
11828734	19200	B-4	6
11828735	19200	B-4	7
11828736	19200	B-4	8

APPENDIX C
EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

C-1. **SCOPE.** This appendix lists expendable supplies and materials you will need to operate and maintain the Telescope Mount. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

C-2. **EXPLANATION OF COLUMNS.**

a. *Column 1, Item Number.* This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., 'Use sealing compound, item 8, app C').

b. *Column 2, Level.* This column identifies the lowest level of maintenance that requires the listed item.

O - Organizational Maintenance
F - Direct Support Maintenance
H - General Support Maintenance

c. *Column 3, National Stock Number.* This is the National stock number assigned to the item; use it to request or requisition the item.

d. *Column 4, Description.* Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the part number.

e. *Column 5, Unit of Measure (U/M).* Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	H		ALCOHOL, DENATURED: (81348) O-E-760	
		6810-00-201-0906	16 oz bottle	PT
2	O		BAG, PLASTIC: grease, vapor and waterproof (20 x 25) (81349) MIL-B-117	
		8105-00-269-4662	Pkg of 100	EA
3	O	7920-00-205-0565	BRUSH, DUSTING, LENS AND PHOTOGRAPHIC NEGATIVE: (81348) H-B-1654	EA
4	O		CLEANING COMPOUND, OPTICAL LENS: (81349) MIL-C-43454	
		6850-00-392-9751	2 oz bottle	OZ

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
5	H		CLEANING COMPOUND, SOLVENT: (81348) O-C-1889	
		6850-00-597-9765	1 gal can	GL
6	H		GREASE, AIRCRAFT AND INSTRUMENT: (81349) MIL-G-23827	
		9150-00-985-7247	7 1/2 lb can	LB
7	H		PAPER, LENS: 11 in. lg x 7 1/2 in. wide (81348) NNN-P-40	
		6640-00-436-5000	Ream (500 sheets)	PG
8	H		SEALING COMPOUND: base compound and catalyst (81349) MIL-S-11031	
		8030-00-275-8110	1 quart can	KT
9	H		SEALING COMPOUND: (81349) MIL-S-22473	
		8030-00-081-2329	10 cc bottle	CC

APPENDIX D
ILLUSTRATED LIST OF MANUFACTURED ITEMS

D-1. INTRODUCTION.

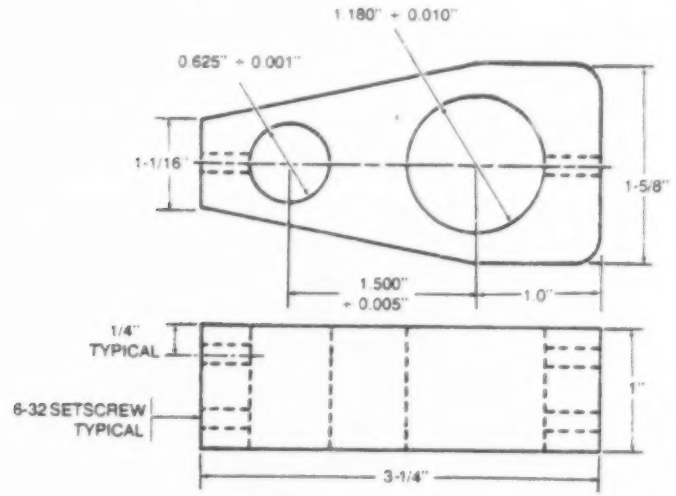
a. This appendix includes complete instructions for making items authorized to be manufactured or fabricated.

b. All bulk materials needed for manufacture of an item are listed in a tabular list on the illustration.

c. These tools are essential and will be replaced by authorized tools as soon as practicable.

ITEM NO.	QUANTITY	STOCK SIZE	DESCRIPTION
1	1 ea	3-3/8" × 1-3/4" ×" 1"	Aluminum
	4 ea	6-32	Setscrew
2	1 ea	11/16" dia. × 2-1/16"	Corrosion Resisting Steel
3	1 ea	11/16" dia. × 1-5/8"	Corrosion Resisting Steel
4	1 ea	1-1/2" × 1-1/2" × 5/16"	Angle, Corrosion Resisting Steel
	2 ea	6-32	Setscrew
5	1 ea	5" × 7" × 1/8"	Aluminum
6	1 ea	2 1/2" X 2" X 1 1/4"	Aluminum

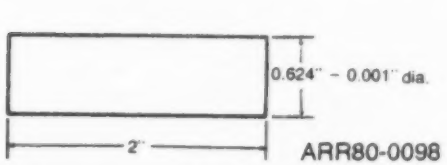
Tolerance Fractions ± 1/64"



The outside diameter on the dioptometers may vary. If the brackets are manufactured locally, check to assure that the proper diameter is obtained before boring the 1.180"-0.010" dia hole.

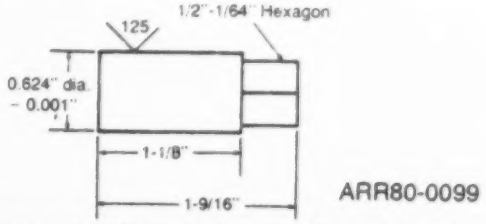
ARR80-0097

Figure D-1. Dioptometer mounting bracket 11828732



ARR80-0098

Figure D-2. Mandrel 11828736



ARR80-0099

Figure D-3. Torque adapter (Mandrel) 11828733

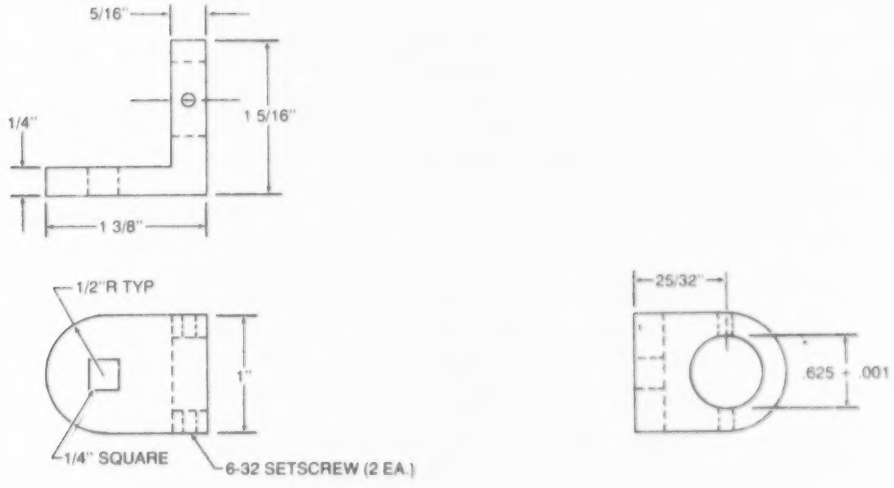
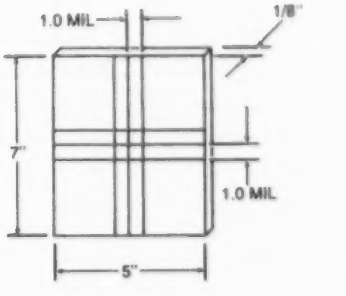


Figure D-4. Torque adapter (M64E2) 11828734



NOTE: MIL = $\frac{\text{TARGET DISTANCE (IN INCHES)}}{1000}$

NOTE: WHITE BACKGROUND WITH BLACK FILLER

ARR80-0101

Figure D-5. Target 11828735

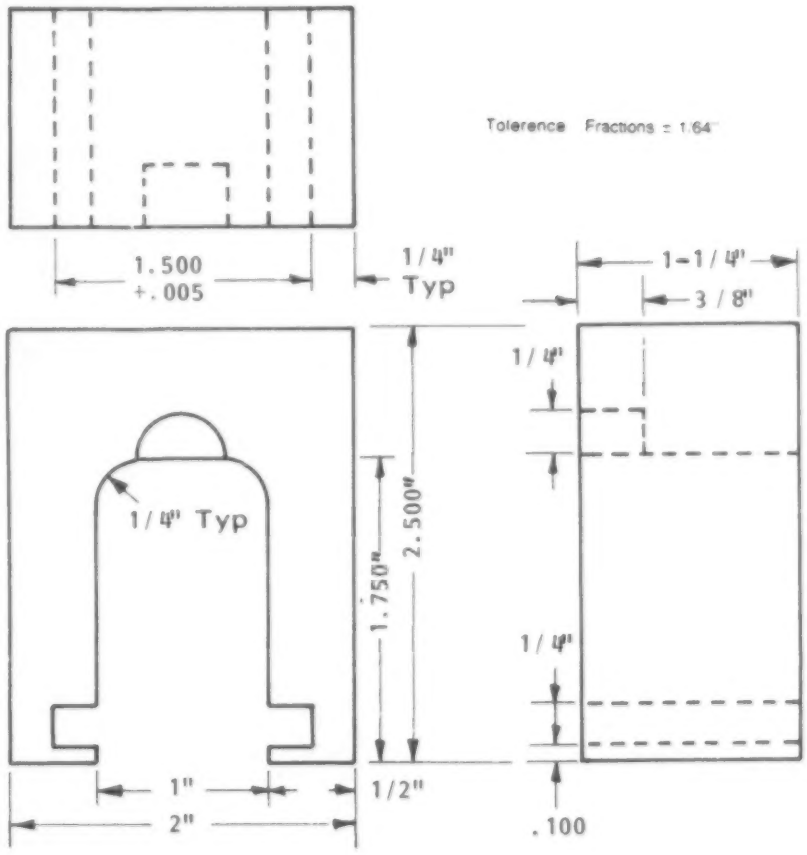


Figure D-6. Machine adapter 11829206.

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2-1	2-7f		
2-61	2-14		

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Add: f. Lubricate all mating surface areas with grease (item 6, app C).

Reason: Allows for Lubricating surfaces not called out in the text.

Add: "and azimuth" between "elevation" and "knobs (7)" in the ACTION column.

Reason: Procedure applies to both knobs.

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